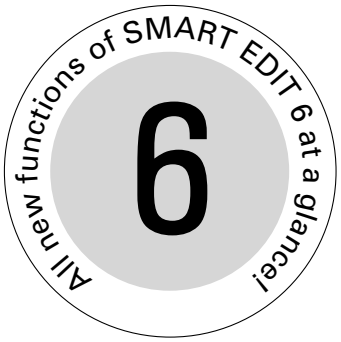
CASABLANCA SMART EDIT



User manual

SMART EDIT 6

1st edition

MACRO SYSTEM

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The operating system VxWorks ® is used in license from Wind River Systems, Inc.

For the IEEE 1394 interface (Firewire®, MiniDV®) a Firewire Stack from Intoto, Inc. is used.

The module for converting graphics data in PNG format is the PNG Reference Library.
The versions 0.97 - 1.0.5 are copyright © 1998, 1999 Glenn Randers-Pehrson.

For JPEG conversion the library of the Independent JPEG Group is used, copyright © 1991 - 1998, Thomas G. Lane.

GLIBC and other supplemental programs are used according to the license conditions of the Free Software Foundation. Detailed information can be found at the www.macrosystem.de web site.

The FreeType Engine is used to render Truetype character fonts.

Character fonts are used in license from enStep Incorporated.

Chapter 1: Introduction

1.1 Congratulations!

Congratulations on the purchase of the software SMART EDIT! We thank you for the confidence and trust you have shown us, and we hope that it will meet your expectations.

SMART EDIT follows a philosophy completely different from that of other video editing systems, opening up new and remarkable possibilities for working with video to you and those who work with you.

If you are new to video editing, you will quickly and easily become acquainted with SMART EDIT and will soon enjoy the new creative realms it will open up for you.

For those of you with prior experience with other systems, (for example with linear (analog) equipment or digital computer systems), it will be easy to make and you will be rewarded with the almost limitless possibilities that SMART EDIT offers.

This manual will help you with installing and operating SMART EDIT. Feel free to contact us to ask further questions or to give us suggestions. Whenever you contact us, please have your customer number or the serial number of your device at hand so that we can help you more quickly.

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Up-to-date information on **MacroSystem** products and our sales department can be found on the Internet.

Please visit our ***Website***:
http://www.macrosystem.de (Germany)
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Phone Support
If you have special technical questions, you can call our technical support hotline:

(North America)
Monday - Friday 9a.m. - 5p.m. (Mountain Standard Time)
303-801-1010

When calling, please have the serial number of your device at hand.

Outside of these times you can email or fax us. Messages received in this way are handled during business hours.

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1.2 What is SMART EDIT?

The software is a non-linear editor. All video and audio data is stored on the system hard drive and can then be separated into individual

scenes. These scenes can be trimmed as desired and added to a storyboard. It is possible to add many different transitions between the scenes. You can mix with six stereo tracks, mixing original sound, various pieces of music, and commentary. A large selection of fonts and effects makes our Titler powerful, yet easy to use.

All of this is meant for the user who is not familiar with computers. Its goal is simplicity of use, even though the power and versatility of the system makes for almost endless creative possibilities. Also, SMART EDIT is not affected by limitations in recording duration that typically apply to computers.

1.3 HDV Video material

SMART EDIT allows for editing of both, DV projects (4:3 and 16:9) and HDV projects (16:9).

SMART EDIT treats HDV projects as follows:
HDV is processed in the background, while DV is processed directly on screen – this is the quality you are seeing. It requires continuous rendering to convert HDV material in DV and to display it in 16:9 anamorph format. In the background, `unseen´ by the user, the HDV material is edited and cut in parallel. All editing information is saved and stored. This information is later taken up, bit by bit, when outputting the finished video. The result is HDV quality with precisely the same editing decisions.

HDV stands for `High Definition Video´ and represents the HDTV (`High Definition TV´) standard for camcorders.
To create HDV films, you require a high-resolution HDV camera – such cameras are today available from most manufacturers. Such a `switchable´ camcorder allows you to film not just normal DV videos, but also HDV.
The high-definition format is stored in a more effective compression form (MPEG-2) directly on the DV tape.

SMART EDIT gives you two options to read your HDV material, which can be set in the record screen (see chapter 5.4, item (3)):

1. You load your video footage into the system, and there it is converted from HDV into DV. Or…

2. You load your HDV video footage into the system, then you switch your camera to DV mode and load that DV stream into the system again.

SMART EDIT 5 supports both currently popular formats: HDV 1440 x 1080 i and HDV 1280 x 720 p.

HDV rendering occurs (e.g.) when creating a new scene, importing using the clipboard, finishing a project or when using special effects.

Note: We would like to point out the necessity of using HDV tapes when recording footage to the HDV Recorder and/or Smart Edit editing software (which allows HDV editing)!
The special surface coating of these tapes considerably reduces the drop-out rate. Drop-outs lead to evidently more problems in MPEG method in HDV recordings than during standard DV filming. Unlike the DV method, HDV recordings may loose an entire Group of Pictures (GOP) due to a drop-out.
This results clearly in more significant picture faults and problems during transfer and editing of such flawed footage.

1.4 Structure of this user manual

This manual explains the SMART EDIT functions but refers to various hardware systems.
As the units running SMART EDIT may have different technical specifications, this may result in differing software functionality. Such differences are highlighted in the respective parts of this manual.

This manual is divided into two main parts and several appendices.

The first part of this manual guides the user through **Installation (Chapter 2)**, then through the **Basics of device use (Chapter 3)** and then through five **Tutorials (Chapter 4)**. These sections are designed to help new owners to begin editing right away.

In the second main part, all screens, buttons and their functions are explained in a complete **Reference section (Chapter 5)**. There you will find useful hints that will make your work easier. If there is a function that you do not completely understand, there you can read up on it to become more familiar.

The chapters **VGA Mode (Chapter 6), Tips & Error Handling (Chapter 7), HD Backup-System (chapter 8), Ethernet-Transfer (chapter 9)** and **Copyrights (Chapter 10)** offer tips and tricks as well as background information. The **table of contents** completes this manual.

Enjoy exploring SMART EDIT!
We hope that you will be as satisfied as the many thousands of MacroSystem customers before you!

1.5 SMART EDIT 6 - new features

The following is a list of all new features in SMART EDIT 6.
If you have already read the manual for version 5, and merely wish to learn the new features of version 6, you can skip the rest and flip directly to the pages referenced after each new feature below.

• Smart Edit 6 can be installed as an update if the previous version is version 5. The project data remains untouched. Users of Smart Edit 4 or lower need to make a full installation.
(Chapter 2.3, page 10 ff)

• In DV projects, it is now possible to store your Storyboard to a DV tape using a special backup mode. When loaded back into the system, once auto split, the original Storyboard is essentially restored again. The system restores scenes incl. their names (except for inserts), effects incl. their settings (except for title texts and the settings of larger add-on products) and the original sound track.
(Chapter 5.2, point 9-12, page 49
Chapter 5.6, point 5, page 60)

• Further archiving: The Storyboard can be burned to CD/DVD or saved to an external Firewire hard-drive. After restoring, the Storyboard can be reconstructed again in much the same fashion as via DV tape (see above).
(Chapter 5.2, point 9-12, page 49
Chapter 5.6, point 5, page 60)

• An HDV Storyboard can be stored to a CD/DVD or an external Firewire hard-drive.
(Chapter 5.2, point 9-12, page 49)

• Different kinds of archives (colors, title texts, audio effect combinations) can be stored on external mediums (CD/DVD, USB stick), external Firewire hard-drive).
(Chapter 5.1, point 13, page 46 f)

• DVDs created with SMART EDIT can be imported back into the system. They are re-rendered, stored as a scene and can then be used in the Storyboard like any other footage.
(Chapter 5.6, point 8, page 61)

• In the Image Pool, images in HDV format are now labelled as such.
(Chapter 3.2, page 21)

• In the **System Settings** screen options, there are new modes: For playing video on a VGA monitor (single monitor VGA output), options are now "**Field**", "**Frame**" and the new mode "**Deinterlace**". In this mode, any possible interlace stripe patterns on moving objects are reduced.
(Chapter 5.1, point 4, page 45)

• The aspect ratio for playback and trimming in VGA can now be set to the new mode "**Good**" – this results in an improved playback quality.
(Chapter 5.1, point 4, page 45)

• A sound effect can be assigned to a transition effect. For this purpose, there is an audio pool with suitable samples.
(Chapter 5.7, point 13, page 64)

• Sound effects from the new audio pool can be incorporated using the "**Sounds**" effect operator. This turns the sound effects into samples and allows you to use them in the Audio Mix (see "**Audio Record, Edit / New Sample**").
(Chapter 5.10, point 7, page 79)

• When creating a scene, there is now an extra choice: The scene can be deposited in the Scene Bin or is added directly to the Storyboard. This way, the constant pop up requester is avoided.

(Chapter 5.7, point 12, page 64
Chapter 5.8, point 12, page 69)

• During an automatic scene split, there are now two extra options for determining what happens with the edited material: "**Add to Storyboard**" and "**Add to Scene Bin**".
(Chapter 5.5, point 20, page 59)

• There is a new Image Processing effect called "**Movie mode**": This effect renders scenes with the 50i (interlace) format to 25p (progressive).
(Chapter 5.8, page 70)

• The new Image Processing effect "**Panorama-Zoom**" renders scenes from 4:3, Letterbox and 16:9 so that there are no black borders.
(Chapter 5.8, page 71)

• In the title editor, it is now possible to import simple text documents (from CD/DVD, Firewire hard-drive, USB stick).
(Chapter 5.9, point 2, page 74)

• The direct sound import feature (samples) now supports MP3 files (in the Audio Record, Edit menu). Import is possible from CD and DVD.
(Chapter 5.10, point 15, page 82)

• Importing a CD/DVD now allows you to select multiple titles to import at the same time.
(Chapter 3.2, page 16
Chapter 4.1, step 6, page 33
Chapter 5.10, point 15, page 82)

• The play preview functionality for the CD import can be set to different values.
(Chapter 5.10, point 15, page 82)

• The new Scene function for audio renders all soundtracks of any Storyboard area to a new audio sample.
(Chapter 3.4, page 24
Chapter 5.11, point 15, page 89 f)

• It is now possible to use multiple audio effects simultaneously in the Audio Mix menu (effect combinations).
(Chapter 5.11, point 13, page 88)

• The new effect combinations can be saved and later used again (Archives).
(Chapter 5.11, point 13, page 88)

• In the Clipboard, multiple items can now be selected.
(Chapter 3.2, page 16
Chapter 5.5, point 19, page 56)

• The maximum amount of possible projects has been increased from 10 to 30.
(Chapter 3.4, page 24)

• Symbol-only interface elements now partially show their function in the form a text "**Bubble Help**" when the pointer is left hovering above the symbol for a second. This function can be switched on/off in the System Settings.
(Chapter 3.2, page 15 f
Chapter 5.1, point 8, page 45)

• The automatic shut down time for the system can now be changed or totally switched off in the System Settings.
(Chapter 2.3, page 13
Chapter 5.1, point 8, page 45)

Chapter 2: Installation

2.1 Registration/Update service

2.1.1 Registration

Please take the time to register with us. There is a registration card in the package.
When you register, your information will be put into our database. Your info will not be given to third parties, but it will allow us to give you better customer service.

Please register, even if you are already registered as the owner of another MacroSystem product!
This registration allows us to offer you a better service.

Your registration ensures that you are also automatically informed about new products, news, modifications, and updates to various **MacroSystem** products. As a token of our appreciation you will automatically receive free codes to unlock the bonus effects available on the included SmartMedia card. (see section **2.6 "Unlocking software"**)

2.1.2 Update

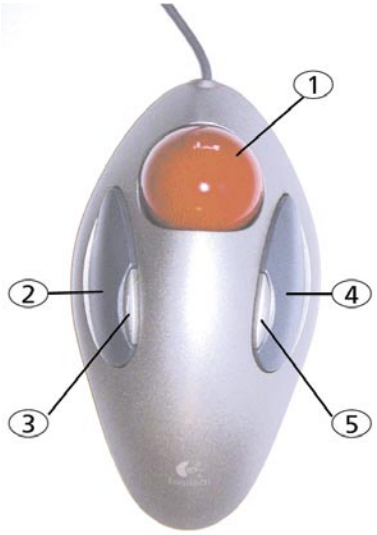
(The following information does not apply to North American Customers.)
On the registration card you can apply for the automatic **update service. This means that you declare yourself willing to buy every new update at a price reduction of approximately 20%. The automatic update service consists solely of new developments in the software.**
Update delivery, available earlier through this subscription than regular ordering, is by invoice with delivery free of charge.
You can cancel your automatic update subscription at any time. You don't have to worry about being obligated by a long-term subscription.
The new versions are announced ahead of time in well-known publications. You can also ask our dealers about new developments or visit our homepage on the Internet.

2.2 Using the Trackball

A trackball is used to work within the screens. Click on buttons to perform functions and access functions by moving the on-screen pointer. Because its handling is needed for the installation of the program, the trackball is explained in this part of the manual.

Chapter 3 (3.2 The User interface) explains how to handle the user interface.

Note: the trackball shown here is only an example. Another model may be supplied with your machine, but it will function in a similar manner. Depending on the system in use, the trackball may utilise two or four buttons.



The trackball consists of three or alternatively five components:

(1) Ball
This is used to move the screen cursor or, in the Trim and Split screens, to scroll through the video.

(2) Large left button (selection button)
This is used for selecting. You press a button on the screen by positioning the cursor over the on-screen button and pressing (clicking) the left trackball button.

(3) The small left button
The Photo Studio 2 software is an example for a product supporting this button. Please read the separate manual of that product for information on the function.

(4) Large right button (cancel button)
This button returns you to the previous state, canceling or stopping the current operation. Pressing this button without having selected anything will return you to the previous screen. Pressing the cancel button when you are making settings cancels anything you have just set and reinstates the prior settings. If you are playing or recording video, then clicking the cancel button will cause playback or recording to stop.

(5) The small right button
The Photo Studio 2 software is an example for a product supporting this button. Please read the separate manual of that product for information on the function.

What is a click?
A click is simply when you press down and quikkly release one of the trackball's buttons. You hear a quiet clicking sound. "Click on the ... button" means that you position the cursor on the corresponding field on the screen with the ball and then press and release the large left trackball button to select (click) the on-screen button. Computer users will please note that our systems have neither a "double-click" nor a "drag" operation. These operations are not needed for our easy-to-use systems.

Why use a trackball and not a mouse?
Many users may ask this question. After all, a trackball is usually more expensive than a simple mouse, and the mouse is better when using a computer. The reason for our decision can be found in the editing philosophy of SMART EDIT. The trackball has the one big advantage that you can use it in your hand or lap without having to use a table. A mouse would also require too much space, especially when "scrolling" through the entire hour-long video for trimming or splitting purposes.
It is possible to use a mouse instead of a trackball. If you would rather use a mouse, please contact your dealer. Not every mouse model is compatible.

2.3 Installing SMART EDIT

The software is loaded from the hard-drive once started.
It is possible that the supplied software version on the SmartMedia card or CD/DVD is more recent than the version already installed by your dealer (or at the factory). To check this, press the button on the front side of the machine to turn it on.
(Using this slider is explained in detail in the hardware manual of your system.)

The Main menu appears after a greeting message and you can compare the version number on the SmartMedia card or CD/DVD with the number displayed in the System Settings screen.
If your system runs a current version, you can start editing directly.
If the version number of the SmartMedia card or CD/DVD is higher, then you should install the more recent version.

You must carry out the installation procedure if you do not see the Main Menu screen once your system is turned on.
You will know an installation is necessary if you see a SmartMedia symbol at the upper-left corner displaying a flashing arrow indicating that the SmartMedia card or CD/DVD should be inserted.

If the symbols displayed above appear, no system software will be found on your system and the installation can only be carried out from a SmartMedia card. **Please continue reading chapter 2.3.2.**

If the version number on the SmartMedia card or CD/DVD is higher, you should install this version. There are two possible options now:

Note: It is possible to update SMART EDIT 6 from the SMART EDIT 5 system software without losing current project data!
A full installation of Version 6 will completely erase the Hard Drive, resulting in complete project data loss!

If you wish to perform a full install of version 6, or if you have been working with a system version older than V5 before now, we recommend that you finish your current project with your current system software and (after recording out your film to another device) install version 6 afterward.

2.3.1 Installing from CD/DVD

(The installation from CD requires SMART EDIT 2.4 or higher and DVD-Arabesk 1.3 or higher)
If your system software is on a CD/DVD, insert it into the drive (DVD burner), click on "**Install Product**" in the "**System Settings**" menu and select the relevant software (Smart Edit).

Since the CD/DVD also contains the complete range of add-on software currently available, you will also see a whole list of programs displayed. Please note that it can take several minutes before the list of programs is displayed.

After you select the system software, click on "**activate**". The data are then copied and the system prepares to carry out the installation. After the progress bar disappears, a message is displayed informing you that the system is now ready to restart. After you confirm this message with "**Ok**", the system might ask you to enter the license code (only if a new version is being installed, for instance, when upgrading from SMART EDIT 4.1 to 5.0).
Please make sure you enter the correct code!

Once you have entered the correct license code and closed the window by pressing "**Ok**", you should also confirm the "**Install product**" window by clicking on "**Ok**". The system will then ask you to remove the CD/DVD. Once you have removed it by pressing on the drive's button, the system restarts automatically and the actual installation process begins:

Note for users with several hard drives: After choosing the language, the system offers a hard drive selection. Please choose the hard drive from which you activated the installation of "**SMART EDIT V 4.0**" in the "**Install Product**" window before! Selecting the other hard drive will not lead to an installation!

Note: On some model types, a CD/DVD may be required to install. Start the system, insert the medium into the drive, power down and re-start again. Now follow the on-screen instructions.

• If you want to install an update (e.g. SMART EDIT 5.1 to 6.0), please proceed as follows:
first of all, select the installation language. A message will then appear informing you that your projects will remain intact during and after the installation. You will be asked whether you want to carry out the installation. If you click on "**Yes**", the software will be updated.

If you want to completely reinstall the software, click on "**No**" (bear in mind that if you choose this option all the project data stored on the system will be lost) . You are then given the option of canceling the operation ("**No**") or carrying out the completely new installation ("**Yes**").

• If you want to carry out a full installation of a new version (e.g. upgrading from SMART EDIT 4.1 to 5.0), a message will inform you that it is not possible to upgrade the current software without losing projects and data.
If you click on "**Yes**", the system will display another query – if you confirm this query, a complete installation will be carried out and all the data that are already stored on the hard drive will be deleted.
If you click on "**No**", the installation process will be cancelled.

Please note that you will have to reinstall your additional add-on software after a full install of the **SMART EDIT** system software.
When reinstalling **DVD-Arabesk**, please make sure that you select the correct version (1.x or 2.x) - it has to be the same base version, which was istalled on your system before.

2.3.2 Installing from SmartMedia card

(Units without SmartMedia card drive or without a multi-card reader only support software installation from CD!)

If the software is installed from a SmartMedia card, insert it into Smartcard Reader above the front inputs of the machine, which must be switched off. Viewing the machine, the gold contacts must be on the bottom side and the cut-off corner on the top side and to the left.

The SmartMedia card is very sensitive so please avoid bending it or touching the gold contacts on the card.

Now you can turn on the machine by lightly pressing the power switch on the front of the unit.
If you insert an invalid SmartMedia card (a card other than the installation SmartMedia card), then the SmartMedia symbol appears (shown below), indicating that the correct installation SmartMedia card should be inserted.

In case you have inserted an invalid SmartMedia card (not the installation SmartMedia card), but a system has already been installed previously, then the system will start, but will display a question mark over the SmartMedia symbol.

The following symbol appears when the correct SmartMedia card has been inserted:

A window will now open in which you can specify the installation language.
Then, specify the installation language and afterwards select a hard disk (if your system is provided with several hard disks). „**IDE 0**“ always represents the top drawer and „**IDE 1**“ the bottom one.
After that you'll be informed that it is not possible to update the software without a loss of projects and data.
After having clicked on "**Yes**“, a new warning appears. After confirming it, the software will be completely reinstalled.
(Clicking on "**No**“ cancels the installation, so no changes will be made in the software.)
To install the software, you have to enter the key code. Remove the SmartMedia card after this.

If your system is already equipped with the same base version (e.g. if you want to install SMART EDIT 5.1 and already possess SMART EDIT 5.0), or if you are updating from Smart Edit 5 to 6, select a language and a message will appear, informing you that your projects will remain intact during and after the installation. You will be asked whether you want to carry out the installation. If you click on "**Yes**“, the software will be updated.
If you want to completely reinstall the system software, click on "**No**“ (bear in mind that if you choose this option any project data stored on the system will be lost) . You will then be given the option to cancel the operation (by clicking on **"No**“) or carry out the new installation (**"Yes**“).

If the ambulance symbol appears, then an error has occurred, perhaps because of defective hardware e.g. due to defective hardware or because of a missing hard-drive. An error code is usually also displayed. If this occurs, please contact your dealer, or MacroSystem Tech Support.

After installation has been carried out, remove the SmartMedia card. Depending the system, you may need to either pull the card out of the slot or gently press it into the drive to unlock it – it then automatically jumps a little out of the slot and you may then pull it out. More information can be found in the hardware manual.

The system will now automatically re-start and you can continue. You should then see the following symbol:

Note: Make sure to put the SmartMedia card

back into its protective sleeve after use to avoid scratches.

Note: Should the system remain unused in the Main Menu for more than 30 minutes, the unit will switch off.
If you wish to continue work, simply start the system again.
It is possible to change or totally deactivate this default setting. To find out how this is done, please read chapter 5.1, point (8).

2.4 Unlocking software

You have the option of "unlocking" the bonus effects contained on the installation SmartMedia card or (if your system is provided with a DVD-writer) on the installation CD/DVD. To do this you must register with **MacroSystem**. (Please read the earlier section **2.1.1 Registration**).
Additional software (more effects, fonts, supplemental software packages, etc.) is available from your dealer.

If your system is equipped with a DVD writer, you should have an installation CD, which contains additional software, which can be unlocked or installed as a demo version, but the demo versions are overlaid with identifying Demo text. In order to use the effects (without the Demo overlay) you can give your dealer the serial number of your system machine (found in the System Settings menu, in the lower-left field). Your dealer can then charge you for the supplemental software and give you a key code for unlocking the software.

Once you have received the code, switch on either the system, insert the SmartMedia card into the card drive or insert the DVD into the DVD writer, after having opened the drawer and click on "**Install product**" in the System Settings menu.
If you have a SmartMedia card containing additional software, please insert it into the SmartMedia card reader as usual and click onto "**Install product**".
The products contained on the medium are displayed in a list.
If you have inserted a DVD, you will have to wait for a while, before the products are displayed. During this time you'll hear a drive sound, which indicates that the DVD is being read by the system.

The term after the product name indicates the status for your installation:

– (hidden): This product and the corresponding effects/fonts are not displayed in the SMART EDIT list. This can be used to hide demos once they have been previewed. Hidden demo effects will not longer appear in the effects lists.

– (demo): The products, effects, or fonts are displayed in the lists, but are labeled with a red flag in the effect list and are identified as demo effects when used in a scene.

– (active): The products, effects, or fonts are unlocked and are available to the user without restriction.

Now select the product or the desired bonus effect and click on "**Activate**". If the effect is not yet unlocked, a menu for entering the key code appears. You again see the name of the product you wish to unlock. After entering the code remove the SmartMedia card or the DVD and you can now use the new product without restriction. If you do not enter the key code, and instead cancel the procedure, then the software will only be installed as a demo version.

If you are using more than one hard drive, then you must install and unlock the software on all of them. One key code will work for all hard drives.
If you subsequently use one of the hard drives in another MacroSystem machine, then the unlocked software will run there only as a demo version.

2.5 Initial operation

After you have turned on the machine by pressing the power switch, you are greeted with the message (the logo of your machine) on the television monitor. If this message does not appear, then check your cable connections and make sure that the television is set to the proper input.

After the greeting the Main menu screen appears automatically. After being turned on, the

hard drive must first spin up before the OS program can be loaded. During this time you will be able to hear the hard drive spinning.
The Main menu screen is the control center for accessing the individual control screens with which you will do your video editing. The startup process is now over, and you can start editing.

We recommend that you familiarize yourself with the **system Basics (Chapter 3)** and then work through the five **Tutorials (Chapter 4)** in order to become acquainted with SMART EDIT. In this way you will quickly learn the system principles and you can experiment before you begin working on your own video projects.

Chapter 3: Basics

3.1 Editing philosophy

Your system operates in a non-linear fashion. This means that every recorded scene can be accessed instantly. The system does not have to spool tape to access the desired scene. Direct access is achieved by recording the video onto a hard drive and not onto tape. On tape, scenes can only be accessed by time-consuming spooling.

A hard drive is actually a storage device from the field of computers and it is used for storing programs (software) and data (video and audio). Hard drives store data differently than tape, because hard drives have a freely movable read/write head, which can move directly to any area of the drive similar to a record player needle, but in a very short period of time (approx. 10 milliseconds).
This means that there is practically no waiting times, even when jumping from the beginning to the end of a video. This technique is called "random access" (you are probably familiar with the well-known abbreviation RAM – Random Access Memory).
Random access (or direct access) is the fundamental characteristic of a non-linear editing system. It makes possible direct and total control over the recorded data.

Editing is therefore somewhat different than with traditional analog devices. The following principles apply to SMART EDIT video editing:

1. Recording of the desired material (video and audio), either completely or in designated sequences, which is stored in up to ten independent projects.

2. Splitting of the recorded material into individual scenes that can each be named as you choose.

3. Trimming of the individual scenes (setting the In/Out points to ignore unwanted footage).

4. Sequential ordering of the trimmed scenes on the storyboard, in the order that you designate. You can also add **Insert Scenes**, (the overlapping of video without affecting the original audio).

5. Selection and use of **Transition effects** (e.g. crossfade, double exposure, etc.), many in real-time (no rendering is required)

6. Selection of **Image Processing** effects (e.g. solarize, sharpen, etc.) to add to scenes or entire sequences.

7. Titling of the storyboard (the addition of text in different fonts, sizes, colors, and effects).

8. Audio mixing with up to six tracks for original sound, commentary, background music and sound effects

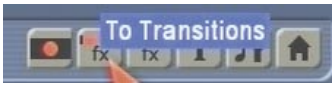
9. Recording of the finished project out to video tape or - if your system is provided with a DVD writer and with the software "**DVD-Arabesk**" - to DVD

And of course, you can record and edit more footage at any time. There is no set sequence. This list serves only to outline the basic concepts involved.

3.2 The user interface

Your system makes use of the **SMART EDIT** user-interface, which contains various elements. These elements are explained here, although they are fairly obvious.
Light gray buttons can be selected (clicked). Dark gray buttons cannot be activated. Using certain functions may cause some buttons to de-activate, meaning they cannot be used.
Some buttons may appear usable but at the moment have no corresponding function. If they are clicked, a red, crossed-out circle appears indicating that no function is currently possible.

Help Texts (bubble help)



Navigate the screen pointer across a user-interface element that is only represented by a symbol, and let it rest there for a little while. After about one second, a Help Text will appear

just above this interface element, telling you what the function does.
As soon as you move the pointer again, the Help Text will disappear.
This function is available for most symbols; however, it is not available within add-on products.
You can de-activate the Help Texts by going to `**System Settings**´ and then `**Additional Settings**`.

Buttons

Such buttons are simple gray fields containing a text caption that describes the function they perform. They cause something to happen when they are clicked on, and they are usually clearly labeled. (e.g. Clicking with the left trackball button on the "Delete" button causes the selected scene to be deleted.)

Selection buttons

These buttons are indicated with three small, white horizontal bars in the upper right corner. Clicking with the left trackball button opens a list of different options. You then scroll through the options with the trackball, stopping on the desired option, which is highlighted in blue. Clicking on the left trackball button then activates the selected option. Clicking on the right trackball button cancels the operation.

Sliders

Sliders can be either horizontal or vertical. After a slider has been clicked, the ball of the trackball is used to control movement of the slider. The cursor disappears and the trackball now controls the slider. Control of the slider is relinquished by again pressing one of the trackball's buttons. Clicking the left button accepts the current slider setting. Clicking the right button cancels any changes you have made and returns the slider to its previous position.
You can use the arrow buttons (usually to the right of a horizontal slider or below a vertical slider) to step through footage one step at a time(e.g. from one frame to the next). The symbols |< and >| are used in the Edit menu to jump to the beginning or end of the storyboard.

Some of the vertical sliders feature a small square box on the top edge. You can find this box in items such as lists, for example in the Clipboard.
The box has three different modes, which can be selected by clicking on the box itself.
If the box contains an X, you are selecting merely the highlighted item in the list.
If a Check marks the box, you will be selecting all items from the list that are `checked´ for loading. A highlighted item without a checkmark in its box, shall not be selected.
If you can see horizontal lines in the box, all items in the list are selected. Now, you can either leave all items selected, or remove a single item from being selected by clicking into its box and removing the checkmark.

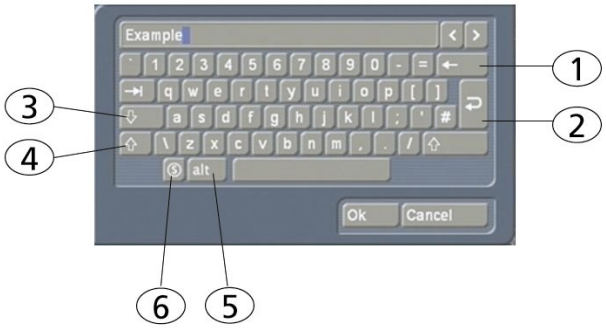
There are also sliders, which allow you to select numerical values such as effect options.

A special feature of SMART EDIT is that you can click onto the value to the right of the slider to revert to the to the preset value. For example, if you have set the value for the effect `**Bars**´ to 20 and confirmed it, simply click onto the number 20 to revert back to the original, preset value of 10. The slider automatically jumps back to the original position and becomes active.

Name field

By clicking on this button you cause an on-screen keyboard to appear showing the name of the currently selected scene. You can then use this keyboard to enter a new name.

On-Screen keyboard



At certain points, such as in the text input menu for titling, SMART EDIT allows or requires text input, (for example when naming scenes, entering text for titles, and naming audio sequences).

Users who have installed the **PowerKey option** or who have connected a USB keyboard can enter the text with the external keyboard. (But only when the on-screen keyboard is displayed). Otherwise the on-screen keyboard appears, allowing text entry with the trackball. The text is entered by using the trackball to click on each individual letter key. Some of the keys are especially important:

(1) Delete key (delete text letter-by-letter).
(2) Newline key (start a new line).
(3) Shift key (toggle between uppercase and lowercase).
(4) Single shift key (only the next key appears in uppercase).
(5) ALT key (special characters, such as @ and €).
(6) The S key to the left, used to display the special characters menu. In this menu you find all the available characters, including many letters used in foreign languages, (e.g. "ç") or letters with accents in French. If you want to enter the characters "é", "á", or "ô", you can either select them in the special characters menu or use the normal keyboard. Click first on the accent and then on the corresponding letter. The accent is not displayed until you select the letter.

When the keyboard is displayed you will see that the entire current name of the scene is highlighted. This allows you to immediately delete the entire name. A new name can then be quickly entered.
If you only want to change one letter within the word, click on the letter just **after** the letter to be changed or move the cursor (vertical bar) by using the arrow buttons to the right of the scene name. Press the delete key and then the key for the new letter. You can insert new characters into text in the same way. Simply click on the character just **after** the desired insert position and then type in the desired characters. Characters are inserted just **before** the cursor.

IN and OUT Points

These points are set to mark certain segments of a scene. This can be a **Trim** procedure, but also the placement of an Image Processing effect in the storyboard (using the **Range** function). When you click with the left trackball button on "**IN**" or "**OUT**", the trackball function changes. Rolling the trackball then causes the video to scroll forward or backward through the video scene with a speed depending on the speed the ball is rotated. An additional click with the left button sets the new beginning (IN) or end (OUT) point. A click with the right button reinstates the original setting.
The length of the scene is indicated as a 7 digit code. 001.15:03 means that the material will run for another 1 minute, 15 seconds, and 3 frames.

Scene check
These two buttons (see above) serve to quickly review the first and last few seconds of a scene or audio segment. The "**I>**" button plays the first 3 seconds starting from the IN point. The "**>I**" button plays the 3 seconds just prior to the OUT point.

Arrow buttons
Stepping through individual frames (see slider) works by clicking on the "**>**" and "**<**" symbols. Clicking on "**>**" moves forward to the next frame. Clicking on "**<**" moves backward to the previous frame. This behavior is found at several points in the program, for example when trimming, splitting, or using sliders within the effect lists.

Symbols for recording, playback, pause, stop
Several menus have buttons for recording, playback, pause, and stop, with which you can play your video and audio material. You are probably familiar with these functions on other devices,

such as your VCR.

This is the symbol for Record and can be found in the recording menu. Clicking on it causes your system to start recording, at which time you can start your video input device. (For best results, be sure to start the input device first).

This is the symbol for Play. Clicking it will play the video scenes or audio samples. In the recording menu it starts the DV input device.

This button causes a Pause in the playback. Clicking on it again ends the pause and the video material is played from the point at which the pause was made.

The Stop symbol stops playback/recording. If you initiate playback again, the video material will be replayed from the beginning. Playback can also be stopped by pressing the right trackball button. If you are using a DV input device, then you can control it directly from the Record screen. (But please be aware that most DV devices are compatible, but some are not. If this is the case, the DV device can be started manually and should then input correctly.) In the recording menu you will also find the three symbols listed above: stop, playback, and pause, plus the symbols rewind:

and forward:

Both of these buttons have a triple function. Fast rewind and fast forward are achieved while the DV source is in stop mode, viewable slow rewind and slow forward in playback mode, and frame-by-frame backward and forward in pause mode.

The color box

The color box enables you to select a color. Clicking on the palette arrow **(1)** enables you to choose a specific color. Scroll through the color palette **(2)** until your desired color is displayed in the color window below **(3)**. After confirming this color by clicking the left trackball button you can define the color more precisely. Click in the large color window and use the upper arrow **(4)** to scroll left or right in order to attain the desired saturation. Use the left arrow **(5)** to scroll up or down to set the color brightness. With a little practice you can specify your desired color by simultaneous use of both arrows. The intersection point of both arrows (if you imagine them extending until they touch within the box) indicates the selected color, which is always displayed to the right in the rectangle **(6)**. Clicking on the left trackball button confirms the setting. You can also click directly on the color you wish without having to use the arrow keys, by simply clicking on the desired color within the color window (3). The color that you selected is at the same time displayed in the top left **color button (9)** for as long as the button remains activated.
Beneath it you will see five other **color buttons/ memory buttons (10)**, which allow you to select frequently-used colors quickly and conveniently. To assign your preferred colors to the memory buttons, first activate a memory button and then select a color in the big color window. Once the required color is assigned to the memory button, activate another memory button or the upper color button **(9)**.
In many cases (e.g. when titling) the color box provides the **Alpha option (7)**. Here you let the desired color shine through your motif displayed on the right **(6)**, (the Eiffel tower is shown here as an example). You can specify the alpha value in percent by moving the scroll bar. The lower

the percent value the more transparent your selected color and the more clearly your motif shines through.
Clicking on the "**Pick color**" button **(11)** opens the first frame of the scene that is selected in the scene bin (in the case of the "**New**" menu) or in the storyboard (in the case of the Effects menus). There is a toolbar in the foreground containing several buttons:
If you have opened the color box from an effects menu, you can first of all use the top left selection button to specify whether the scene ("**Effect**") that is currently selected in the storyboard or another freely selectable scene ("**Choose**") should be displayed.
Clicking on "**Choose Scene**" opens the scene bin and you can specify a scene from which you want to capture the color. If the upper selection button was previously set to "**Effect**" it will automatically switch to "**Choose**" after you select another scene. You can then use the selection button to jump easily back and forth between the two scenes.
(By activating the color box in the transition effect menu, you can use the two „**Left scene**" and „**Right scene**" buttons allowing you to switch back and forth between the respective scenes.)
You can use the slider control or separate buttons at the bottom to roll through the selected scene frame-by-frame. (In the case of image-processing effects, you also have the option of rolling through the entire length of the effect, i.e. through several scenes.)
The "**Position**" and "**Size**" buttons allow you to adjust further settings for the color capture function. The smaller the little selection box is, the more precisely you can specify the color. In the little "**Color**" box, you can view the color over which the box is currently placed. If there are several colors contained within the area of the selection box, an average color value is taken.
After you click on "**Ok**" you will see that your selection is applied to the color window of the color box. If you click on "**Cancel**", you will close the menu without applying any settings changes.
You can use the **Archive function (8)** to save the colors you specify for later use (see ***„Archive function")***.
When you have finished making all the settings you want, click on "**Ok**" to confirm and to exit the color box.

Note: If you are not using a professional video system (e.g. Betacom SP), avoid using high saturation values. Otherwise "color drain" or "jaggedness" might occur that is only visible after recording out to tape. A simultaneous reduction of color saturation and brightness results in a similar color with a better recording quality for VHS, SVHS and DV.

Tip: If you would also like to use a color in titling that has already been used for an effect (e.g. picture-in-picture), archive the effect color, change to Titling and reload the color. You can access archived colors from all projects!

The symbols for direct menu change
Most of the SMART EDIT screens are represented by symbols.
You will find these symbols on small buttons at many places and they serve to directly switch from one menu to another. It is always possible to return to the Main menu and go from there to the individual menus, but the experienced user will save time by using the symbols to access menus directly. You will become used to the symbols while doing some editing. Instant memorization of their uses is not necessary.

Wave form and audio scrubbing
The menus Insert, Range, Split, and Trim (video and audio) contain a **loudspeaker symbol** in the operating panel. When this symbol is active (blue) a small box containing the Audio Wave Form is displayed at the other side of the operating panel. The wave form graphically displays the volume over time. The height of the curve represents loudness (the higher, the louder) and the width is a measure of time.

In the wave form you see a vertical, black position marker indicating your current picture position. This position marker is also shown when you scroll through the scene or the audio segment.

The Audio Wave Form is automatically played when one of the buttons "**In**", "**Out**", "**Split Position**", "**/>**", or "**>/**" is clicked and the trackball is held motionless for approximately 0.5 seconds. A movable, vertical white-hatch bar indicates the actual playback position.

When trimming the beginning of a scene (**In**) the black position marker can be seen to the left on

the curve. When trimming the end of a scene (**Out**), it can be seen to the right.

As you scroll through the scene you hear the corresponding audio. Depending on the scrolling speed you hear the audio faster or slower (often referred to as "scrub audio").

The wave form has two different display forms. When scrolling through the scene you see a detailed wave form or a segment of the wave form. As soon as you receive a preview of the last second the wave form for the entire playback time is shown.
If you don't need the wave form then you can make it go away by clicking on the loudspeaker symbol so that it becomes brown and the frame disappears. To bring back the wave form simply click on the symbol again.

i-buttons:
The Transition effects, Image Processing Effects, and Titling screens all have an "**i**" button. This is a button for obtaining information but it currently works only for some of the effects.

If you have selected supplementary or bonus effects and click on this button, a **Product information** menu opens and gives you an explanation or summary instructions for the selected effect. This button is inactive for those effects for which no information is provided.

The "**i**" button is also present in the **Install product** menu in the System Settings screen. There you can bring up information on the products selected in the list (e.g. effect modules, font packages, etc.). You will also find information and summary instructions for products that are only installed as demo versions, if available.

The info button of the edit menu is available both in the "Storyboard" part (displays information about the storyboard) as well as in the "Scene Bin" (displays information about the activated scene).

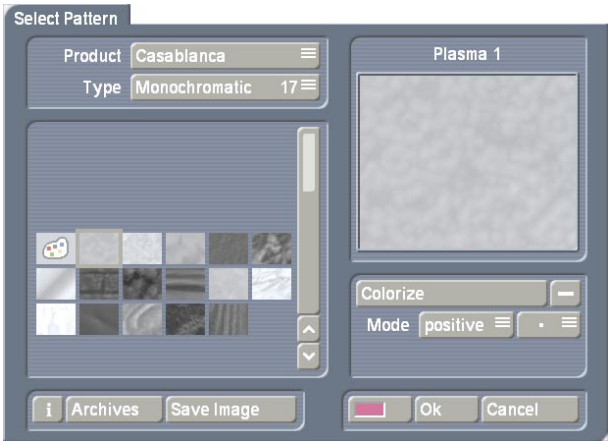
Archive function
You will see the "**Archive**" button in various menus and screens (e.g. titling, color box).
Clicking on this button opens a screen in which there are four buttons: "**Load**", "**Save**", "**Delete**", and "**Cancel**".
Clicking on "**Load**" displays a list of the titles, effects, or settings that have previously been saved. You can then directly select or scroll to an entry in this list and confirm.
A click on "**Save**" displays the same list. There are now two possible courses of action:

1. You can click on the gray rectangle directly below the list so that the keyboard is called up and you can type in a name, after which you click on "**Ok**" in the keyboard and in the text archive field. This creates a new archive entry.
2. You can select an entry from the list and then click on the gray rectangle in which the name of the selected entry is now visible. Now you can use the keyboard field to overwrite this name with another name of your choice. This differs from the first option in that here you not only change the name, but you also overwrite the entry itself, so that the original entry is permanently deleted.
If you click on "**Delete**", a list of the saved entries is displayed in which you can select an entry to delete and confirm with "**Ok**".
Clicking on "**Cancel**" exits the window without making any changes.
With the help of archiving you can save frequently used standard text and reuse the text at any time in any of the projects.

Image Pool
An additional function is the Image Pool. This is a 'global' area for storing graphics; this means that the image can also be exchanged between different program packages and projects or saved directly from your footage.

The main program and almost all supplemental programs use the Image Pool. In this way, graphics brought into the system by one program can automatically be used by all other programs.

The Image Pool is used in many areas of the system, e.g. titling, when creating new scenes, in the edit screen or in conjunction with DVD-Arabesk.
If you select the scene "**Pattern**" in the menu "**New**", the option "**Select Pattern**" appears to the right. You can click on that to open the Select pattern screen which offers you a number of patterns to choose from.



In the area to the above-left you see the selection button "**Product**" offering you a list of the main program "**SMART EDIT**", "**DVD Arabesk**" (if it is installed), different additional programs and the option „**Custom Images**“.

The next selection button "**Type**" offers you up to four different types of graphics:

- **Masks**
Masks are used principally by programs such as **Liquid Images** and **Video SpiceRack**.
The masks are gray pictures whose form is used by the programs to specify the course of effects. But the masks can also be used for other purposes. For example, they can be colored and used to achieve variety in backgrounds for titling.

- **Monochrome**
Monochrome (gray) patterns (also called "**textures**") are listed here. These can be colored and used as background elsewhere. Because the patterns are usually smaller than the screen, they are automatically tiled on the screen, until the desired surface is completely covered.

- **Color**
The multi-colored patterns are used in the same way as the monochrome patterns. No further coloring is possible as the patterns already contain color.

- **Pictures**
Complex pictures can be found in this category, (e.g. you see here the maps of the program „**Columbus**“ (if it is installed) or the background pictures for DVD Arabesk). Although they are intended to be used as background for DVD titles, the pictures can also be used elsewhere in the system.

You'll find "SMART EDIT" under “**Product**“. From here, you can also find logos of the single systems as well as the **MacroSystem** logo. These can be used as background pictures when creating your own text panel in the titling screen and are therefore very useful for credits.
In addition, you will find many pictures provided here (e.g. stars) – they have many uses particularly when creating titles.

In the bottom left corner of the image pool you will see the i-button described earlier. This button allows you to access information on the currently selected "**Product**”.

If you click on the "**Save Image**” button, the “**Product**” selection will change to “**Custom Images**” and the “**Type**” selection will change to “**Images**”. The system will also ask you to select an entry. Confirm this notification with “**Ok**” and select a free (black) image from the list. Then click on “**Save Image**” again to open the scene bin so you can select the starting frame of a scene that you want from the bin. After you confirm with “**Ok**” it appears in the image collection and in a large preview (right). You can store a total of 18 of your own images here, which you can later use anywhere in your video editing work.
Tip: You can’t delete your own pictures, but you can replace them anytime with new ones!
You can of course also readjust the “**Product**” selection and “**Type**” selection manually before saving a picture.

All patterns can also be used as texture for fonts in the Titling menu.

In the list to the left you can select the desired mask, which is then displayed to the right in large format. In the top left corner of this preview window, you can see if the footage is actually available in HDV quality.
You can also see the names of the selected mask above and to the right.

Below this window you find several buttons:
The “**Colorize**“ button allows you to colorize all patterns - even colored ones.
If you click onto the “**Colorize**” button, a menu with several buttons will appear. Use “**Mode**” to select how many colors are to be used. This will then lead to the respective amount of palette buttons appearing.

Your coloring will be displayed in the preview window.
Original: There is no coloring and the pattern remains in its original color or monochrome. Additionally, you can use this function to return to the original color of the pattern.

1 Color: The pattern brightness remains; yet one color is added according to the color you choose in "**Color 1**". The brightness chosen in the color box is ignored as this is controlled by the monochrome part of the pattern.
2 Colors: You can create a shift from one color to another. "**Color 1**" is added in the parts used by the monochrome image. "**Color 3**" replaces white. Depending on the pattern, instead of the black and white parts, the most bright and dark parts of the pattern are used. Between the two colors, all previously monochrome tones are replaced by the respective color tones and a soft color shift is created.
3 Colors: In comparison with the shift between two colors, a third color is added: "**Color 2**". This color replaces the gray tone found in the middle of the original monochrome shift. The result is a shift from Color 1 to Color 2 and from there, to Color 3.
Tint: This mode is only provided for color masks. If you select this function, the "**Color 1**" button is activated, which you should then click. Specify a color and confirm with "**Ok**". All the colors of the mask are then replaced by the one you selected. The entire picture is then filled with one shade of color, though the saturation and brightness are retained.
Hue: This option is likewise only provided for color masks. If you click on this button, the system first of all determines which is the dominant color in the mask and then displays it as "**Color 1**". You cannot select this button. Now click on "**Color 2**" and use the upper palette arrow to select any color shade that you want to replace the dominant color with. All the colors in this mask are thus replaced with a new one, whereby the distance in the color palette between the original and replacement color is equal to the distance between the dominant color and Color 2.
Hue 2: This option functions in a similar way to "**Hue**", and is therefore only displayed for colored masks. Though in this case you can freely select the color that is to be replaced by capturing it from the image (see Color box).

You can customize the settings for your mask still further by using the "**Brightness**", "**Contrast**" and "**Color**" buttons that are located in the bottom area of the window.

For simple, soft shifts, it is recommended that you use the "**Linear H**" (horizontal shift), "**Linear V**" (vertical shift) and "**Linear D**" (diagonal shift). The direction of the color shift can be altered using the "**Mode**" button.

The little box next to the "**Colorize**" button can be used to activate or deactivate the colorization of the pattern displayed in the upper preview window. If a dash appears in the little box, you can see the original color. If a check mark is shown, you can see the pattern with the colorization that you set. You do not have to activate the check mark in order to colorize a pattern – all you need do is click on the "**Colorize**" button!

With "**Mode**" you can choose from eight different positive and negative inverses.

To select a color, you can access the color box directly using the little color box in the bottom left corner of the right-hand image pool area (on the left next to "**Ok**"). If, for example, you click on the "**Color/Pattern**" button when selecting a border for the titles, you will first of all see the image pool in which you can either select (using the button described here) a mask or a color as desired.

The pattern chosen, with its chosen settings (e.g. direction, color), can be saved and used again at a later stage. For this purpose, use the "**Archives**" button. Included, you'll find a number of pre-set examples ("**Granite dark**", "**Wood**",...).

Below this window you find the buttons "**Color**" (the color box can be accessed from many masks) and

Demo software
Most supplemental programs can be installed as demo versions. This means that you can let your dealer transfer these versions to your SmartMedia card or CD/DVD, so they can be previewed at your leisure. To do this, insert the SmartMedia card or CD/DVD and click on the button "**Install Product**" in the System Settings screen. Select as accustomed the program in the list and click

on "**Display**".
The selected software is then activated as demo version, as you can tell by the caption "(**Demo**)". You can use this program without restriction, i.e. you can insert effects, calculate them and view them, but each effect is superimposed with the red text "**Demo**". To purchase a code to unlock the supplemental program, please contact your Dealer.

3.3 Working with Graphics Tablets

You also have the option of connecting an Intuos graphics tablet or, if your system has a VGA port, a VGA tablet.

Further information on available and supported tablets can be obtained from your dealer.
You can find out how to connect and calibrate both tablets below. For further steps on operating your tablet, please refer to the instructions that came with it.

3.3.1 Intuos tablet

Connecting
Plug in the cable of the graphics tablet into an available USB port on the back of your machine, which can remain switched on when you plug in the cable.

Calibration
In order to be able to control the SMART EDIT user interface precisely, you must first calibrate the graphics tablet before using it for the first time.
To do this, enter the "**System Settings**" and click onto the "**Calibrate Graphics Tablet**" button.
A menu appears, displaying the name of the connected tablet.
You can now set the "**Pressure Sensitivity**" of the tablet's pen. A higher value means that you have to press harder to reach an effect. Push the slider to the entire right ("**Off**") to deactivate the pen point totally – instead you will have to press the lower positioned button on the side of the pen itself (see Intuos manual for more details).

The "**max. Distance**" button allows you to specify how big the distance between the stylus and the tablet can be for the system to still react. A distance of 0 only allows for a very close proximity to the tablet. A value of 100 allows for a large distance. It is best if you simply try out values to find the one that suits you.

Press "**Calibrate**" and you will see a requester, prompting you to "**Please click the top left corner of the tablet**". Having done this, you will have to repeat it for the lower right corner of the tablet. The coordinates of the tablet now correspond to the screen.

Working with the pen
To work with the pen, you have to move it across the tablet without actually touching the surface – as if the pen is "floating" slightly. To "click"; either press the pen point onto the tablet surface or press the lower button on the pen's side. Doing this represents the standard "left click".
To simulate a click of the right Trackball button (such as for cancelling), make sure that the pen is floating slightly above the tablet and press the top button on the pen's side.

3.3.2 VGA tablet

Connecting
Unpack the VGA tablet and connect it to your system. To do so, plug one end of the VGA cable into the "**VGA IN**" input on the tablet and the other end into the VGA port of your system.
Then connect up the USB cable by plugging one end of the cable that is supplied with the tablet into the USB port on the tablet and the other end into a free USB port on your system.
You must now provide the tablet with electrical power by connecting the power supply cable to the adapter and plugging the cable into an electrical socket. Now plug the adapter cable into the 12 V connection of the tablet.
Note: Although the menus are subsequently displayed on the VGA monitor, you will still of course need a TV monitor for playing your video footage.
You can connect an additional VGA cable to the "**VGA OUT**" port on the VGA tablet. The other end of this cable can be connected to another computer monitor so that you can "feed through" the video picture and thus work on a total of three monitors.

Switching on
After you have made the cable connections, switch on your system by operating the front switch and switch on the VGA tablet by pressing the button at the top right.
Once your system has started you will still see the menu displayed on the TV monitor since you first have to switch over to the VGA setting. To do so, open the "**System Settings**" menu and set the "**Screen**" button to the required "**VGA**" option. A notification appears informing you that a computer monitor is required for this. You are then asked whether you want to continue – you should answer by clicking on "**Yes**". The system is then restarted.
Afterwards you will see the main SMART EDIT menu on the VGA tablet. Now, within the next 15 seconds, confirm the notification that informs you that the screen display has been switched over. To do so, click on "**Yes**" in the usual way using the trackball.

Calibration
In order to now operate the VGA tablet with the accompanying stylus, open the "**System Settings**" menu and click (using the trackball) on the "**Calibrate Graphics Tablet**" button in the "**Settings**" section.

A menu appears, displaying the name of the connected tablet.

You can now set the "**Pressure Sensitivity**" of the tablet's pen. A higher value means that you have to press harder to reach an effect. Push the slider to the entire right ("**Off**") to deactivate the pen point totally – instead you will have to press the lower positioned button on the side of the pen itself (see Intuos manual for more details). We recommend a pressure sensitivity of 35-40.

You can place a check mark in the little box next to the "**Mousepointer**" option to activate it so that you always see a red arrow on-screen wherever the tip of the stylus is positioned. If you deactivate the function (dash), the arrow is no longer displayed.

Press "**Calibrate**" and you will see a requester, prompting you to "**Please click into the center of the cross in the top left corner**". Having done this, you will have to repeat it for center of the cross in the lower right corner of the tablet. The coordinates of the tablet now correspond to the screen.

Working with the pen
To work with the pen, you have to move it across the tablet without actually touching the surface – as if the pen is "floating" slightly. To "click"; either press the pen point onto the tablet surface or press the lower button on the pen's side. Doing this represents the standard "left click".
To simulate a click of the right Trackball button (such as for cancelling), make sure that the pen is floating slightly above the tablet and press the top button on the pen's side.

3.4 The (integrated) Pro Pack software / available functions

On some hardware variants, optional software functions may already be available or may differ slightly from the function described in this text. On system variants, the software functions need to be purchased separately.

The following functions are available if the Pro Pack software has been installed or if it is part of the included software:

• Up to 30 projects

• Scene function (`Scene´ button in the transition, image processing and titling effect menus)

• Sample function (button „**Sample**" in the Audio Mix menu)

• Extended titling (`Line´ button)

• Single frame preview (`Single frame´ button in the transition, image processing and titling effect menus)

• Option for switching 4:3 format to 16:9 mode to be able to use the anamorph 16:9 recording mode off some camcorders (`Format´ button in the record screen)

• Setting record time for loading footage into the system and create stills during a recording (`Mode´ button in the record screen)

• Graphical display of sound envelope to help with editing music or original sounds (audio-scrubbing with envelope display found in the Split, Trim or Insert screens)

• Selection of 6 audio tracks

• Copying video scenes or samples into other projects (`Clipboard´ button in the `Special´ screen)

• Splitting a scene according to rhythm (`Index´ button in the `Split´ screen)

Chapter 4: Tutorials

We recommend working through the five tutorials in the order given here. This offers you an introduction to video editing followed by the more specialized techniques of SMART EDIT (insert editing, audio mixing, titling, etc.).
For these tutorials we assume you are using only one monitor (video mode). If you are working in VGA mode, then you can read about eventual changes to the user interface in chapter 6: VGA Mode.
Please note that depending on the system model, the functions explained in this text may vary slightly or may be missing.

4.1 Tutorial 1: A small video project

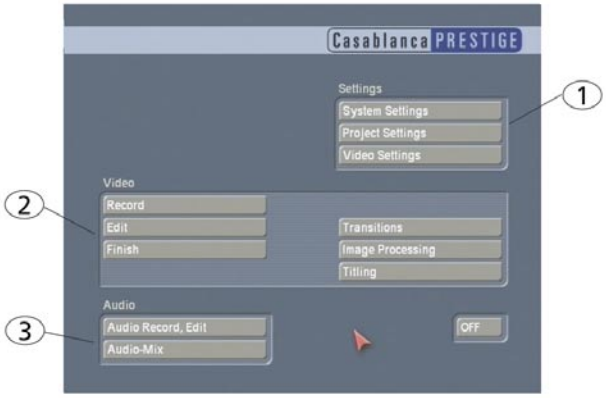
This example introduces you to the basic concepts of editing with SMART EDIT. Special applications and procedures are not explained yet. In this example you will create a simple video project. A "project" is the creation of a complete video starting with raw footage and ending with a finished film.

Step 1: Selecting raw footage

For this example you will use your own raw footage. Set aside a cassette with raw footage (e.g. video from your last vacation), be it in DV or HDV format. You will only need a few scenes that last a total of about 3 minutes. Try and select interesting material so that the project will be more fun!
Put the cassette in your video input device (e.g. camcorder, VCR, etc.) and rewind it to the position where your selected footage begins.

Step 2: Orientation in the Main Menu screen

Turn on the machine and wait until the hard drive is ready. The Main Menu now appears offering several options for selection. There are three main areas:



(1) Settings (above right)
Here you select settings such as trackball speed, desired audio quality, or the current project.

(2) Video (center)
Here you will record your raw footage onto the hard drive and then divide (**split**) it into editable scenes. You will then edit (**trim**) the scenes and finally put them into a new sequence in the storyboard. You will put transition effects between the individual scenes and apply an Image Processing effect (or filter) to one of the scenes. You will then create a title and then finish your video project.

(3) Audio (below left)
Here you score your video with music, sound effects or spoken commentary.

This division into logical steps makes for a clearly structured work plan. If you should have any questions during the course of work, then simply check the **Reference Section(Chapter 5)** of this manual – all buttons are explained there in detail.

How do you access the individual work screens?
Position the screen cursor onto the corresponding field. Then click on it with the left trackball button. The right trackball button cancels, or returns you to the previous screen.
This operation requires a certain familiarity with the user interface. If these instructions are unfamiliar to you, please read about the trackball in **section 2.2** and then the operating elements in **section 3.2.**

Step 3: Settings

Before you begin editing, you should make your own personal settings.

System settings
Click on the "**System Settings**" button to view the System Settings screen. Here you can select the "**Trackball Speed**" appropriate for you. There is a choice of three different speeds.

Now exit this menu either by clicking the right trackball button or by clicking on the **Main menu symbol** (bottom right) with the left trackball button:

Project settings
Now you can make the settings for your project. A click on the Project Settings button leads you to the corresponding menu.

At the upper edge you will see the the hard-drive "**Name**" button. By clicking on the gray rectangle the keyboard is displayed and you can enter the name of the inserted hard drive. You can also see which hard drive is currently in the machine (the label on the hard drive itself is not visible because the hard drive is contained within the machine).

The field "**Used Capacity**" gives information on how much of the hard drive has been filled (in percentage) and how much space is left. Audio and video are not distinguished.

Further below you see the "**Select**" button. After clicking this button you see a list of several projects contained on the hard drive. Each project can be worked on independently of the others. But for now, click on **project 1** ("**P 1**") and confirm with "**OK**".

Next to "**Select**" you see the field "**P 1**", which you should now rename. Click on it to bring up the keyboard (**section 3.2: On-screen keyboard**). Delete the default name and enter instead "**First tutorial**".
The button "**Information**" will bring up a menu that gives information on the project name, storyboard length, scenes in the storyboard, chosen effects, and number of scenes contained in the scene bin.

Now, you must define the "**Format"** of the project. Of you whish to playback DV footage, you must opt for either a 4:3 or a 16:9 project. If you video is recorded in HDV quality, you must select the setting "**HDV**".

At this point we don't want to go into too much detail on the functions and meanings of all the settings. These will be explained in more detail later! For now, set the **Image size** to "**Normal**".

The display, "**Used Capacity**" gives information on the space used on the hard drive (dark blue), and on the total remaining time (light blue). A display for individual projects is not possible because this display refers to the entire hard drive.

Now exit this menu.

Video settings
Enter the **Video settings** (if supported) screen and turn on your video input device. Here you can select the appropriate input. If you using a VCR as input device, then you will usually use the SCART input (in Europe,) or you will use CVBS (RCA) or YC (S-video). Of course, for optimum quality you can use the DV input for digital devices, if your system is provided with a DV interface.

You will have the option to select between the Front or Rear inputs: be sure to set this according to how you are physically cabled from your input device. Your Prestige will automatically detect which DV input you are using. We recommend that you only connect one DV device at a time, or errors may occur.

Press Play on your input device, so the video will start. If your video signal is now viewable underneath the menu bar , you can continue by adjusting the **Brightness, Contrast,** and **Saturation** if necessary. These settings are not accessible if the DV input is being used. If your DV signal requires correction during input, use the YC setting and cable in via S-Video and RCA audio. Exit the menu when you are satisfied with the picture quality.

Step 4: Recording and editing

Recording
Now select "**Record**" to enter the Record screen. In the background you will see your video. An operating panel in the foreground displays (after the recording is stopped) the name of the scene, the recording time, and the approximate remaining time available on the hard drive.

If you have connected a DV device for input through the i-Link interface (if your system is provided with this interface), then you can use the five buttons in the lower part of the operating panel for DV control. Note that not every DV device is compatible, but you will find that most are.
Seen from left to right on the DV control panel, you can: stop playing the DV tape, play the DV tape, pause, rewind, and fast forward.
Rewind and fast forward each have three different modes. Fast rewind or fast forward results if the button is pressed while the recorder is stopped. Viewable slow rewind or slow forward results if the button is pressed while DV unit is playing. Clicking the button while the DV unit is in pause mode moves a single frame backward or forward.
The selection button "**Mode**" (if supported) offers three options in a DV project, but for this exercise leave it set to "**Normal**".

With the button in the lower-left corner (arrows facing each other) you have the option to move the panel to the lower screen edge . With the button on top of that you can reduce the panel size to the functions for reinstating the larger panel (the **Record** menu symbol) and for moving the panel.
The four menu symbols in the lower right corner take you to the Edit, Record/Edit, Video settings, and to the Main menu screens.

Now wait until an scene you wish to load is reached. Clicking the record symbol causes the Prestige to begin recording.

As soon as recording begins, the current panel is replaced with a smaller one that displays only the elapsed recording time and a stop symbol. You can see that your system is actually recording because of the changing recording time.
Note: Depending on the model type, you may not actually see the video footage when loading material into Smart Edit.
Now record a few minutes of video, preferably containing 4 or 5 different scenes. Then press the stop symbol. Your first recording is now stored on the hard drive.

If you are recording an HDV project, the HDV video footage will be loaded into your system once you have clicked onto the record button. It will be automatically converted from HDV to DV format. Of course, in parallel, the HDV material is saved and edited in the background. This takes some time.

Now record a few more scenes. Do this as described above. The recorded scenes are at first automatically titled with "**S 1**", "**S 2**", etc. To change the name (e.g. to "vacation") click on this field immediately after recording to bring up the keyboard where you can enter your text.
Stop the input device and then exit the "**Record**" menu.

Editing
Now go to the Edit screen. Here you see the Scene Bin in the lower half of the screen. The Scene Bin contains a sequence of small pictures ("thumbnails") showing your recorded scenes. To the right and above the scenes, you can see the name of your project – if it has been named.

All created individual scenes that are ready for editing are stored in this bin. You can see up to eleven entire scenes at one glance in video mode. For more you must scroll the horizontal slider below the scene bin to access following scenes.

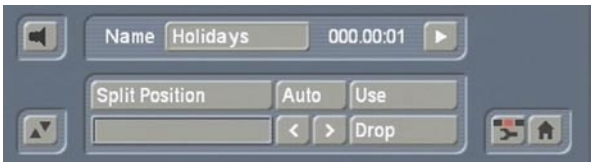
You can also use the arrow buttons next to the slider to step through the scenes forward or backward one by one, or to jump to the beginning or end of the scene bin.

In case you have not already renamed the scenes in the "Record" menu, then you again have the chance here to give the scenes your own names. To do this, position the desired scene in the center of the panel so that is displayed larger than the rest and the length of the scene can be seen displayed directly above it. (Scroll through the scene bin or click directly on the desired scene so that it is moved directly to the middle "selected" position.)
Now click on the button below the scene to call

up the keyboard.

Each scene can now be viewed or edited from this menu as soon as it has been brought to the middle of the Scene bin. Once there it is the selected scene, and it is slightly larger than the other scenes in the Scene Bin.

Click on the play symbol (next to the slider) to begin playing the video. Playback can be halted at any time with the stop button, pause button, or with the right trackball button.
Your video is now played from the hard drive. (This lets you know that the footage has been properly digitized.) If video and audio are successfully played, then you know that the installation was successful, the cables are correctly connected and the hard drive is communicating properly.
Your recorded scenes will probably consist of several different camera perspectives. In order to be able to separately edit and arrange them, they must first be divided up into individual scenes.
Click on the menu item "**Split**" in the bottom line of the Scene Bin menu. The first frame of the selected scene (in the center of the Scene Bin) appears with the Split menu, which is displayed in the lower third of the picture. The top line of this menu displays the name of the scene (e.g. "vacation"). Next to that you see a time indicating the length of the selected splitting position (initially 000.00:01).



Here you must find the exact positions where one shot ends and another begins – the so-called scene changes. Press the "**Split position**" button to obtain a new, narrower control panel. Now you can scroll through the scene. Look for the first perspective change and scroll slowly to the desired split position. Confirm this position by clicking the left trackball button, which causes the selection menu to be displayed again. There you can adjust the split position by using the"**<**" and "**>**" keys to move forward or backward one frame at a time.

To check that you have correctly selected the split position, set the Split position at the last frame of the first take. Clicking on the "**>**" key will display the first frame of the next take, clicking on "**<**" will display the previous one. After you have done this, you can play the selected portion (by clicking on the play button).

If you want to keep this scene, select "**Use**". If you do not plan to use the selected portion of video, click "**Drop**". If you have decided to use part of the scene, the rest of the scene is given a name with an additional suffix, (e.g. "vacation.1", "vacation.2", etc.).
After you have completed this step, you still have the rest of the non-edited raw footage. Continue as above until you have Used or Dropped the rest of the footage.

Now you can return to the Edit menu (click on right button).
All takes marked as used are now displayed as individual scenes ("vacation.1", "vacation.2" etc). These split copies require no additional space on the hard drive. The original scene ("vacation") is still present.

You can now play the individual scenes. Simply click on the scene. The scene will move to the center of the scene bin and then becomes the selected scene. The duration of the selected scene is displayed above it. If you want to play the selected scene simply click on the Play button.

Tip: At this point, if you select the original scene "vacation" in the scene bin and click "**Delete**", you will regain space on the hard drive – equivalent to the amount of footage that was dropped when the scene was split up into pieces. This footage cannot be recovered, so only do this if you need additional drive space. However, if all of the footage was used, then deleting the original scene "vacation" will have no benefit.

Trimming scenes
Now that the raw footage has been divided up into scenes, we can begin to trim them. Trimming means that the beginning of the scene can be advanced or the end of the scene can be shortened. The result should be a scene with proper In/Out points that make the scene start and stop when you choose.

Clicking on "**Trim**" calls up the corresponding Trim screen. In the background you see the first

frame of your video. The trim panel is in the foreground and covers one third of the picture. The name of the scene appears in the upper line, and next to that its length is displayed. For this tutorial a time between 3 and 10 seconds is suitable. (If the currently selected scene is shorter than that, exit the Trim screen and select another scene. If it is longer, trim the scene down to 10 seconds)

Now trim the In point, (the point at which the scene will begin playing). Clicking on "**IN**" replaces the displayed panel with a narrower one, in which you can scroll with the trackball and adjust the In point. Rolling the ball to the right causes the scene to be shortened from the beginning. Rolling to the left increases it again. Clicking the left trackball button confirms your setting and you are returned to the Trim menu. There you can make a frame-by-frame adjustment using the arrow keys "**<**" and "**>**" located below the "IN" button.

You can adjust the Out point by clicking on "**OUT**" and proceeding as explained above. Rolling to the left shortens the scene from the end and rolling to the right increases it again. The arrow keys located below the "**OUT**" button are also available for frame-by-frame adjustment.

At the top of the Trim panel you see the new scene length next to its name. The time information for the first frame is displayed next to the "**IN**" button – 000.00:14 means, for example, that the scene has been shortened by fourteen frames. The time information for the last frame appears next to the "**OUT**" button.
Click on the right button to leave the Trim menu. Select the next scene and trim it as explained above. Continue until all scenes have been trimmed.

You should now have a series of scenes in the scene bin that are all free of bad properties (e.g. blurred video, bad frames, scene breaks, etc.) and each last from 3 to 10 seconds.

The Storyboard
Now the scenes are ready to be put into proper sequence. SMART EDIT lets you sequentiallly order the scenes in the storyboard. It doesn't matter in what order they appear in the Scene Bin.
Select the scene in the Scene Bin that you want to be the first scene in your video project. Click on "**Add**" (in the upper screen area, below the storyboard itself). The scene then appears in the horizontal panel (the storyboard) directly in the center.

The storyboard contains the finished video project (which right now only consists of 1 scene). Of course, changes can be made to the storyboard at any time.
Now select the second scene and click again on "**Add**". You are asked whether the scene should be added before or after the scene in the storyboard. This question appears only when the first scene is the active scene in the storyboard (in the center, with its length displayed above). Normally, SMART EDIT will add a scene after the active scene in the Storyboard. The query in this case makes it possible to insert a scene in front of the first scene. For now, select "**behind**".
Now you already have two scenes in the storyboard. Add the rest of the scenes in this manner. When you are finished, all the scenes that make up your video should be in the storyboard.
In the scene bin every scene that has been added to the storyboard is indicated with a white point in the upper right corner.
Now you can view the finished video in its "rough draft" version. First you must make the first scene in the storyboard the active scene. There are four ways to do this:

(1) Click with the left button on the arrow button "**I<**" beneath the storyboard. The first scene of the project is now the active scene in the center of the storyboard.
(2) The slider under the storyboard is used to scroll through the Storyboard scenes (using the trackball). Move the slider all the way to the left.
(3) Using the "**<**" button you can move one scene at a time toward the first scene.
(4) You can also click directly on the desired scene, causing it to be put in the center.

Clicking on the Play symbol below the storyboard to the left causes the video to play from the beginning of the active scene (in this case, the first scene). All scenes are played in the or-

der you have defined, from left to right through the storyboard.

If you want to change the sequence, (for example move a scene from the end of the storyboard to the beginning), select the scene in the Scene bin. Now click in the storyboard on the scene after which the selected scene is to appear. Click on "**Add**". Finally, select the old scene in the storyboard and remove it by clicking on "**Remove**".

Step 5: Effects

Transition effects
The basic footage of your video is finished. Now some effects can be added. Return to the Main menu. Select **Transitions**. Alternatively, you can simply click the menu symbol at the bottom right of the Edit menu:

In the **Transitions screen** you see the storyboard above in its usual place, but in the center you now find the active scene area now has room for two scenes. Bring the two scenes that you would like to connect with a transition into the center. Click on the Play button below the storyboard to play the last second of the first scene and the first second of the second scene so that you can observe the hard cut between the two scenes. Now select a transition to be placed between the scenes. SMART EDIT offers you many possibilities from a simple crossfade to complex 3D effects.

Below left in the menu you find a list of the individual effects, where a maximum of 7 effects are displayed at one time in the list; use the slider to access the rest. Every effect is represented by a name and a symbol. Simply click on the desired effect to highlight it in gray.

For example, select the effect "**Crossfade**" (or any other effect, if this effect is not available), which causes the first scene in the center of the storyboard to change gently into the second.
In this case the effect is a real-time effect, so its symbol, outlined in blue, is displayed immediately between the two scenes in the storyboard after you have clicked on "**Add**".
If your system does not support real-time effects, all effects must therefore be rendered. The blue symbol will appear after rendering.

Now you can check the effect by clicking the Play symbol. This plays one second of the video before the effect, the effect itself, and one second after the effect.

Now select the next transition point in the storyboard. To do this click on the "**>**" arrow button or click directly on the next scene in the storyboard. Now you can select another transition effect, (for example the effect **Bars**). In the field to the right you have three options to change how this transition performs: **Type** (**Move** or **Over**), **Direction** (6 different directions, represented by arrows), and **Bars** (2-200).
This time the effect symbol placed in the storyboard is outlined in red after a click on "**Add**". This means that the effect has to be created before it can be viewed.
We recommend that you activate the "**Smart Rendering**" function, so that added effects can be rendered in the background while you continue to work (see chapter 5.1, point 6).
However, you can preview the effect to decide if you really want to use it. Click on the "**Preview**" button below the storyboard. A screen will open in which one second before the effect, the effect itself, and one second after the effect is played. For a few of the complex effects, the preview may wobble a bit, because the number frames per second is reduced. However, this will not occur in the actual transition once created.

For some of the special effects (e.g. "**Backward**") the preview may be slower than the final calculated effect. Of course, you can also choose the other settings for type, direction, and number, and observe these with the preview.

When you are satisfied with the effect, click on the "**Create**" button below the storyboard to the right. A screen opens so that you can follow the creation (with a blue progress bar and actual video preview).
You can activate the option „**Smart Rendering**“ in the „**System Settings**“. Now the inserted effect will be rendered in the background, while it is possible to insert more effects.
After a few seconds the effect has been created. The outline of the effect symbol in the storyboard now appears blue instead of red. Now the effect can be viewed by clicking on the Play

symbol. One second before the effect, the effect itself, and one second after the effect is played. If the effect appears to you to be too fast or too slow, then you can change its speed by changing its duration. The default setting is 1 second, but you can click to the left above on the button displaying the effect duration. This opens a screen in which you can set the effect duration exactly with a slider. The effect must then be recreated.

Image Processing effects
After all transition effects have been inserted and created (all symbols are outlined in blue), you can move on to Image Processing effects. (Having activated "**Smart Rendering**", you can switch between menus while your system creates effects in the background.)These effects change an individual scene partially or over its entire duration. Exit the **Transitions** screen and go to the **Image Processing** screen by clicking on the following menu symbol:

At first glance everything looks just as it did in the Transitions screen. But now you find only one active scene in the center of the storyboard, exactly as in the **Edit** screen. This scene represents, approximately, that portion of the storyboard to which you want to apply the Image Processing effect. When initially added to the scene, the effect will last the duration of the entire scene. You may make frame-accurate changes to the range of the effect, if desired.

Image Processing effects modify a freely definable section of the storyboard. For example, the entire scene may be to be brightened. In the following tutorial you will transform a scene in the storyboard into a moving charcoal drawing. First, select a scene in the storyboard to which you would like to add the effect. The scene should not contain any transition effects.

Click on the effect list and scroll to the desired effect (exactly as with transition effects). For this tutorial select the effect **Lineart**. This effect causes the video picture to appear as a black-and-white drawing. In the field to the right next to the selection list you can specify the desired **Contrast** with values between 1 and 8. (The higher the contrast, the stronger the difference between light and dark portions of the scene.) Once you have done this, click on "**Add**".

Now you can observe the scene with the inserted effect by clicking on "**Preview**". It will now look like a moving charcoal drawing!

Click on the duration display after the effect has been added, and you will see a screen in which you can specify the desired duration of the effect. For more information see Reference 5.9 (Image Processing effects).

If you like the effect, you can create it. Clicking on the Play button below the storyboard causes the exact length of the effect to be played.
Now exit this menu by clicking on the right trackball button.

Step 6: Audio mixing

You now can begin audio mixing. Call up the "**Audio Record, Edit**" screen. Here you will add commentary and a piece of music to your short film. To do this you must - if your system sports a CD/DVD drive, use a CD with suitable music. If you do not have a CD drive, connect an audio source (e.g. CD player or your camera with a microphone).

Recording audio
In the Audio Record, Edit screen, the first thing you see is the **Input** selection button.
If available, select the option "**Microphone**".
You should then already hear the microphone and view the volume level in the above left meter.
If your system does not feature this input, select another available input.

In principle audio recording works just like video recording. This means that you start with your music source, (e.g. a tape deck), or you speak your commentary into a microphone.

To record this material on the hard drive you must first click on the red Record button at the bottom right in the menu. The counter to the left begins to count (just as when recording video) and displays real time. Now speak a short commentary into the microphone, (e.g. "My first video with SMART EDIT").

Next, record some music of your choice into the machine. This can come from any audio source than can be connected via RCA cables.

Direct audio conversion from CD.
To quickly load in music from a cd, open the DVD writer tray and put in a cd and close the tray.

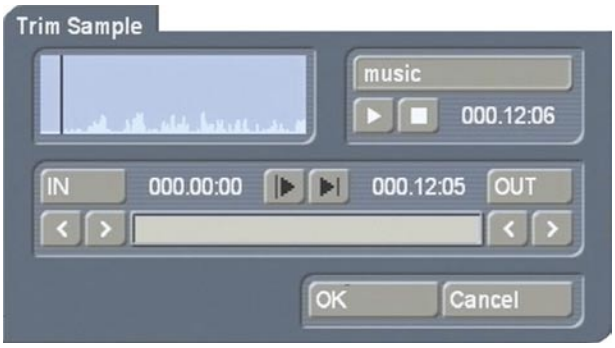
Go to the Audio Record, Edit screen and click "**CD Import**" .

You will now see the CD Audio menu. Click on the "**CD Contents**" button, and a list of the songs on the CD will appear to the left.
Select the desired title in the list. Should the little box above the vertical slider contain an X, click onto the desired title. If the box displays a checkmark, mark the desired title and make sure there is a checkmark in front of the title name.
If the box has horizontal stripes, click into it and change it to either a cross or check (see chapter 3.2 `***Sliders***´).
Now confirm by pressing "**OK**".

After a moment, the song will now appear in the list of audio samples. It is a good idea to rename the sample at this point.
(Detailed explanation of this screen can be found in chapter 5.10, item (15).)

You can hear the result of your audio recording by clicking the Play button. With the Trim function you can set precisely the beginning and end of the audio sample. You may wish to split the recording into individual parts by clicking on the Split button.

Audio trimming works almost like video trimming. Click on "**Trim**" and the following menu appears:



You can click either the "**IN**" or "**OUT**" button (depending on whether you want to shorten the audio from the beginning or from the end) and then scroll through the recording to set the position of the In or Out point. Alternatively, you can use the arrow buttons for trimming frame-by-frame.

Clicking on the "**I>**" symbol plays the first 3 seconds, clicking on the "**>I**" symbol plays the last 3 seconds before the Out point. This makes it much easier to find the exact end of the audio, because it is not necessary to play the entire piece in order to check the Out point. This is especially helpful when dealing with longer audio samples.

Now give your music sample and your commentary sample a name. Simply click to the left below on the gray rectangle with the default name suggested by the system (A1, A2, CD Audio, CD Audio2 etc.) to bring up the on-screen keyboard with which you can change the name of the sample.

To prevent confusion, we will wait until tutorial 3 before discussing the many special functions of this screen.
Now exit the recording menu and switch to the "**Audio Mix**" screen.

Audio mixing
Here you see the storyboard again.
Below it are several horizontal bands: these are the audio tracks.

The topmost track is reserved for the original sound of the video whereas the **Commentary track** (microphone symbol), the track(s) for **background music** (musical note symbol) and **effect track(s)** are free for further use.
Of course, you can use the remaining 5 (or 2) tracks according to your needs – the names of

the tracks /symbols to the right are merely intended as a guide.

If audio must be created, then you will see a **color control band** (directly below the scenes, but above the audio tracks). The band is either red, yellow or blue (sized in sections corresponding to the length of a scene in the storyboard). A red band means over-modulation, a yellow band means "must be created" and a blue band means the audio has already been created, and it is ready to play.

Activate the commentary audio track by clicking either on the microphone symbol or on the track itself. The track turns from gray to blue when selected.

Then click on the "**Add**" button and select the commentary that you have spoken and named from the audio list now displayed. Confirm with "**OK**" and the commentary is now placed as a light/dark blue band below the scene you have selected in the storyboard, on the track you designated, (in this case, the commentary track). The audio sample will be placed at the beginning of the scene currently selected in the middle of the storyboard. It can be moved using the "**Range**" function (see below).

The light/dark blue in the audio sample represents its volume level. Raising or lowering of the volume will change the ratio of light blue to dark blue. This will also show fade-ins and fade-outs, once they are added. (When the sample is no longer the highlighted sample, these bands will appear light/dark gray.)
Remember that all of the functions in this screen affect only the highlighted audio sample. Only one sample can be highlighted at any time.

In case you made a mistake and the commentary should begin in the next scene, delete the audio sample by clicking on "**Remove**".

If the audio does not yet have the desired length, then it can be corrected with the "**Range**" button. You can read more on this in tutorial 4.3 (audio mixing, step 3).

You also see that the color band under the storyboard is now partially yellow, because the audio has not yet been created. Click on "**Create**" to mix the audio on the original track with the commentary. After creation you can check your results by clicking on the Play button.

Do the same with your music recording, which you will put onto the third track (the background music track).

You can also change the audio volume in case your commentary is too quiet and the music too loud, (if you haven't already done so in the recording menu).

Select the audio sample you placed in the commentary audio track so that it is highlighted in blue. Scroll the volume slider to the right so that the displayed dB value to the right is increased. Increase about 5 dB.
Then click the audio sample on the background music audio track so that it is highlighted. Scroll the volume slider to decrease the dB by –5.

Click "**Create**" and the overall soundtrack will be created. With the above changes finished, the commentary becomes louder and the music quieter so that the commentary can be heard more clearly.

Clicking on the **Play button** plays the storyboard from the active video scene with audio. The audio level is displayed.

There are many more options in fine-tuning the audio portion of your project but they will be covered in subsequent tutorials. You can also read more on audio mixing in the **reference (Chapter 5).**

Now you can exit the Audio mix screen.

Step 7: Finishing your first video

So, now your first video project is almost finished. In the Main menu, click on "**Finish**".

If you have already created all the effects and audio segments in the various submenus, then only the function "**Choose Range**" and the button "**Record to VCR**" can be clicked in a DV project. Otherwise (also in already rendered effects of an HDV project), the function "**Create**" is also available, which we will discuss below.

Decide how you would like to output. If you

choose "**Analog**" and your effects have not been completely created, then click on the button "**Create**" and the system then takes care of all the remaining necessary creation of effects/ audio. You can follow the progress in a preview window that displays a blue progress bar and a list of the effects as they are created.
After the calculation is finished you may click on "**Choose Range**" so that the Range menu is opened and – in case you don't want to record out the entire storyboard – you can use the IN and OUT buttons to specify the segment to be recorded.

Finally, click on the Play button next to the "**Analog**" button. You are requested to switch the video recorder to recording mode. Clicking on "**Ok**" activates recording out.

If you want to record out to a DV device, choose "**DV**" next to "**Record to VCR**". After you have created all effects (see above) – click on the button "**DV Recorder Controls**" causing the corresponding DV operating panel to appear.

The top row of buttons control the DV device, the lower Play button makes the Prestige start playing your video project and start the DV device recording. Now select the desired position on the DV tape before starting recording out with a click on the lower "Play" button. No picture is displayed while recording out!

If you select "**HDV**" output (only available if you have created an HDV project), the footage must be rendered again (see above), even if the effects have already been rendered in for DV. This may take some time.
In the end, you can output the material just like with DV projects.

Of course, you can burn your finished video directly to DVD if you are using a **system with DVD writer**. Select the program "**DVD Arabesk**" in the list in the lower-left screen and click to the right on the option "**Launch program**". You then enter the DVD menu whose operation you can read about in the separate manual you have obtained after buying the program "**DVD Arabesk**".

Note: The DVD-Arabesk software may differ slightly from the description below on some systems.

In the "**Image quality**" section, you may see the "**Rendering**" button, which provides you with three options, namely, "**fast**", "**normal**" and "**intensive**". These options allow you to influence the picture quality of the computed film.
In some cases you cannot play an inserted DVD or a film created using DVD Arabesk. In that case, you can therefore ignore the playback functions described in Chapter 3.2 of the DVD Arabesk manual.

So, this short tutorial is over. The examples that follow, "**Insert editing**", "**Audio mixing**", and "**Titling 1 and 2**", will explore some of the things that we have only mentioned up to now.

4.2 Tutorial 2: Insert editing

Now that you have become familiar with basic editing with SMART EDIT, you can continue with more specialized tutorials.

What is the essence of modern music videos? You hear a complete musical composition from beginning to end. The camera is sometimes focussed on the artist, but at other times you see completely different scenes.
The same situation occurs for lectures, interviews, speeches at wedding celebrations, etc.

The exercises in this chapter assume that you are somewhat familiar with the SMART EDIT user interface. The instructions given are therefore not as detailed as before.

You will create a music video such as those shown by various television music channels. The main function you will be using is Insert-editing, which you will learn about here.

Step 1: Preparations

At first you require the raw footage. You need a fairly long scene, preferably a continuous one, where the music is always synchronized with the artist's lips. A singer friend of yours filmed with a camcorder will suffice. A television news speaker or commentator will also do.

The complete raw footage (your "background")

should ideally be 30 seconds long or longer. Now you need some scenes that you will overlay onto the background with Insert-editing. Such scenes can contain much more than the background video, (for example a sunset, a car race, etc.).
Trim these Insert scenes so that each one is about 5 seconds in length. For three inserts you will need at least 30 seconds of original video.

Step 2: Edit

Now go to the "**Edit**" menu. Put the background scene from the scene bin into the storyboard with "**Add**".

Select the first short scene to insert from the scene bin and click on the "**Insert**" button. You are now in a time-setting menu in which you can freely place the pictures (not the audio) of the insert scene onto the background (the background video is displayed on the screen)

This menu is the same as the Range menu. At the moment, the insert scene is positioned at the very beginning of the background scene.

You will see that there are two functions here, "**Trim**" and "**Position**".

"**Trim**" allows you to trim the scene being Inserted. (This can also be done in the main Edit screen).
"**Position**" lets you designate the start point where the Insert scene will appear in the overall 30-second background scene.

You will let 3 seconds of the background scene run before the first insert scene appears. Set the selection button in the panel above-left to "**Position**" so that the option "**Start**" appears below it, which you should now click.
With Start you can specify which frame of the background will be the first to be overlaid by the Insert scene.

Scroll to 3 seconds (the time is displayed to the right in the menu) and confirm with the left trackball button. The "**<**" and "**>**" buttons below Start allow frame-by-frame changes, if needed. Click on the right trackball button in order to return to the "**Edit**" menu.

Now look at the storyboard. There are now three scenes in the storyboard – the one in the center contains an Insert symbol. First the 2-3 seconds background, then the insert scene, then the rest of the background. The insert scene has been marked with the Insert symbol. The overall length of the storyboard is still 30 seconds.

This division into two background scenes (which would become one again if you were to remove the insert scene from the storyboard) makes it possible to overlay additional insert scenes onto the same background.

Play the storyboard from the first scene. You will see the background scene, then a hard cut to the insert scene, and then the background scene again. The audio from the background scene is heard the entire time.

Now shift the Insert scene forward a little. Click on the Insert scene in the storyboard and select "**Range**" (to the right of the "**Insert**" button) so that you are again in the time-setting menu and the background scene is visible. Notice that you once again have three modes to choose from: "Position" to change its placement in the background scene, "**Trim**" to shorten the Insert scene or "**Trim E**" to shorten the insert scene while monitoring the insert scene itself.
Now click on Start and scroll forward (to about 4 seconds). You can now exit the menu.
Now you can begin with the second insert procedure. Click on the last scene in the storyboard (last part of the background scene). Then click in the scene bin on the second scene you wish to insert and select "**Insert**" so that you are again in the "**Range**" menu.

The default starting point is again the beginning of the scene. If you do not Position it, the second insert would then follow directly after the first. But this is not what you want. There should be several seconds of background between the two inserts. So you now click on "**Position**" then on "**Start**" and now you move the beginning of the insert to the right; 3 to 4 seconds is enough time. Now exit the menu.

Five scenes can now be recognized in the storyboard in the "**Edit**" screen. The two inserts have divided the background scene into the following five segments:

1. the background scene before the first insert
2. the first insert
3. the background scene between the first and second insert
4. the second insert
5. and finally the rest of the background scene after the second insert.

Now you can add the third insert to the remaining segment at the end of the storyboard. Use the procedure described above. Click on the last scene in the storyboard, select the third insert scene in the scene bin, then click on "**Insert**", and finally shift the starting point appropriately.
The music video is now practically finished. The draft version can be played. The background and the insert segments alternate, and the music is played in its entirety.

Step 3: Effects and finish

Now some transition effects will be added. This is done the same as with the normal storyboard created with "**Add**" (**tutorial 1**). Add some transition or image processing effects to your Insert scenes. Lip synchronization is not affected.

Then go to the "**Finish**" screen from the Main menu and click on "**Create**", but only after you have selected the type of recording out (DV, HDV or analog), if possible. This saves you from being asked in every menu whether you have already calculated everything. To the left of this button you are informed whether effects and audio in this menu have been created or not.

Tips:
We would like to call your attention now to some specific issues regarding transitions placed on Insert scenes:

– Transitions reveal a part of background material that was completely masked by the Insert. This is used to prevent an immediate "hard" cut to the next scene. You may want to use an insert clip to "mask" a distorted (e.g. jittery) video segment. But if so, consider that the insert clip should have some extra length if you wish to use transition effects.
– You have the possibility to fade two insert scenes into each other by connecting them with a transition effect.

– The duration of the effect is limited by the duration of the insert scene.

Now your music video should be finished! It will probably not be a candidate for "MTV", but you have learned the possibilities that the Insert function offers you.
For example, you can show different camera shots of a wedding ceremony without cutting off the flow of the audio of the ceremony. You can mask distorted segments, and you can achieve picture-in-picture effects without affecting the background audio. There are many possibilities that you will certainly take advantage of in the future.

4.3 Tutorial 3: Audio mixing

This exercise will acquaint you in detail with the possibilities of audio mixing. This exercise assumes that you are already familiar with exercises 1 and 2.
The goal of this exercise is the perfect audio mixing of a video with corrections to the original sound, and with the addition of commentary and background music.

Step 1: Preparations

You have already successfully made the various connections.

Now you need some video. This you can easily create after having worked through the previous exercises. The video should be 2 to 4 minutes long. All effects should be calculated. One of the most important principles of audio mixing is that the video itself should be completely finished. Any changes to the video material can destroy all the work you put into audio mixing!

After completion of video and audio mixing, it is still possible to add scenes to the beginning and end of the storyboard, or to delete scenes. Depending on what you do you are given an appropriate warning and you can then decide if

you want to go ahead with the action.
Insert scenes can be added without danger after audio mixing, because they don't make any changes in timing or audio.

Step 2: Recording

In the audio section go to the Record, Edit screen. At the above-right you can specify the input for your audio source. You can choose several options, depending on the audio source.
Note: If you connect a mono microphone keep in mind to select the option **Mono** under **Mode** so that you can still hear the sound in stereo.

You need some music to add to the video mentioned in step 1 (e.g. from a CD or from a music TV channel), and you need several commentaries.
Important note: Important note: Do not set the volume levels for your audio recordings too high (the audio level meter should not hit the red area!)
If you do very little audio work, use the yellow area of the meter so that quality does not suffer and so that audio is not too soft during playback. If you are planning on doing a lot of audio mix work, make sure to set the meter to a low level. Over-modulation can occur even if two audio tracks both use the yellow level of the meter. The audio volume meter has a peak display. The highest value is shown for a short time using a little mark. This way, even short level peaks can be seen and over-modulation can be prevented. Although lowering the level can later reduce over-modulation, it is far easier to monitor the volume levels even before recording.

Now record the audio segments and the commentaries. Give the segments names, as you have already done in earlier exercises.
You will want to trim the music recording at the beginning and the end because the starting times of the music source (e.g. from radio) and of recording will almost certainly not be exactly the same. Do this as described in the first tutorial.

Step 3: Placement and mixing

Afterward call up the menu "**Audio mixing**". Here you will arrange and digitally mix the recorded audio segments.

Select the first scene in the storyboard so that it appears in the center. Then select the (first) music track by clicking on either the musical-note symbol or directly on the track itself. Now click on "**Add**", select the music piece from the audio sample list that appears, and confirm with "**OK**".
In case the music piece is too long in spite of trimming and the end of the audio track lies beyond the storyboard, simply shorten the end of the audio scene: go back to the Record, Edit screen and trim the music segment or trim it using the Range function.

If you are not certain how long your storyboard is altogether (including effects), then simply look under "**Storyboard length**" in the Finish menu. Shorten your music segment to the same length.

If the music piece is too short to fill the entire storyboard, either select the scene in which the music ends, or select the music directly, and then click again on "**Add**". The audio recording is now repeated starting exactly where the first music segment ends.
(Of course, it is also possible to replace music scenes. Simply click on the inserted music segment, select "**Remove**" and add, as above, a different piece of music.)

Now we can insert the commentaries. Click on the second track (commentary track) to make it active.

Now look for the scene in the storyboard where you want to insert your commentary and put it in the center. Click on "**Add**" and then select the first commentary sample in the audio list and confirm with "**OK**". The commentary sample then appears on the commentary track at the beginning of the selected scene.
Now we come to the fine adjustments – to the proper placing of the commentary sample.

At first, play the video from the commentary position (click the Play symbol to the left of the storyboard scroll bar). You should see the video and hear the commentary. You can also observe the volume level displayed within the audio sample graphic.

Then click on "**Range**", select "**Position**", and shift the Start point, so that the commentary begins earlier or later. Scroll to the ideal position and check again by replaying. When you are

satisfied with the commentary placement, return to the menu Audio mix screen.

Now it is time for the first creation! Click on the commentary in the commentary track and then select "**Create**". The system computes the audio tracks affected by the commentary. When the calculation is finished, replay the storyboard (Play symbol to the right of the scroll bar).

Pay close attention to the volumes of commentary, original sound, and background music in relation to each other. It is highly likely that there is a mismatch. Often the commentary is not loud enough and is masked by the background music. You can now match the volumes to obtain the proper audio relationship.

At the moment the audio in the commentary track is selected. The "**Volume**" slider applies to the entire length of the highlighted audio sample. You can set the volume lower (negative dB values) or higher (positive dB values). After creation you can immediately check the result. Within the audio track you also see the volume displayed as a 2-tone-blue wave form.

It will often be necessary to lower the volume of the background music and/or the original audio in order to hear the commentary sample. Here you want to correct the volume of the "neighboring tracks" for the duration of the highlighted sample. Click on the commentary sample to highlight it. Then click the "**Correction**" button and select the camera symbol (representing the original audio track) from the list. Now use the dB slider to the right (NOT the Volume slider above) to correct the original audio track's volume for the duration of the commentary sample.

Next select the musical-note symbol in the "**Correction**" list and use the control to the right to lower the volume by 10 dB. The music volume is lowered by 10 dB during the commentary sample, and and when the sample ends--so does its correction to the other tracks. They will then return to their original volume levels.
Use these controls until you have found your ideal audio mix.

If you would like the volume change not to be abrupt, but gradual so that it sounds as if you are controlling the change by hand with an audio mixer, click on the button "**Fade**" (while the commentary is active). In the following menu you see two possible settings, Fade-in and Fade-out.
Two sliders appear, i.e. for fade-in and fade-out, together with several default values between 1/2 second and 10 seconds.
A fade-in value zero seconds means an abrupt volume change. A value of one second means that all volume changes take place gradually over the course of one second. This applies to the volume of the affected track (in this case the commentary track) and also to its correction of all neighboring tracks.

Set the values for both fade-in and fade-out to one second. This achieves an smooth volume transition. After the renewed creation you can check the result.
The first commentary sample is now complete. Find the position for the second commentary and repeat the above procedure.

After all commentaries have been mixed, you set the volume of the original audio and the background music. Select the first piece of background music in the storyboard and play it. In case the original audio cannot be heard and the background music is too loud, you can adjust the volumes using the volume control. You have already learned earlier in this chapter how to do this.

With audio mixing it is even possible to remove disturbing sounds, for example coughing on the original source audio.
The wave form is the suitable tool for this purpose.

Left-click on the desired audio sample to highlight it in blue, then select the "**Wave Form**" menu item. In the "**Wave Form**" dialog, first insert three anchor points by means of "**Add**" in the volume display beneath the wave form. Then activate the leftmost of the three new points by clicking on it. The color of the activated point changes from red to green. You can now change its position, either by clicking on it again and then dragging it with the trackball to the desired position, or by clicking on the "**Range**" button. If the "**Range**" function is used, the associated video frame is displayed in the background, and the position of the point can be determined according to its location within the video.

Place the first point horizontally ahead of the unwanted noise to be eliminated, without however modifying its vertical position. Position the second point horizontally in the middle of the unwanted noise and drag it at the same time vertically downwards to dampen the sound. The third point marks the end of the unwanted noise: it should therefore also be at the same level horizontally as the first, but beyond the noise. Click on "**Create**" to reduce the volume of the unwanted noise substantially without changing the remainder of the audio sample.

Audio mixing is now finished. Play the entire film from the Finish screen. If necessary, you can make further corrections.

4.4 Tutorial 4: Titling 1

SMART EDIT provides high-performance titling with which you can insert opening titles, end credits, subtitles, etc. into your video project.

Again, you need an edited video to do this. This can be a complete video film project, but for this exercise it is sufficient to have 3 or 4 scenes with a length of about 10 seconds each.

Click on "**Titling**". This screen is very similar to the "**Image Processing**" screen, because titling is a similar task. A segment of the storyboard will be modified, only in this case the modification is an inserted text and not an effect.

As you have done when practicing image processing effects, select a scene in the storyboard for your first title. You can simply take the first scene.

Step 1: Adding an Opening title

You will now insert an opening title to your video project. This title will display the name of the video on three fixed text pages. From the Main Menu, Click "**Titling**". Once in the Titling menu, select "**Pages**" and add this title effect onto the storyboard.

Then click the "**Enter/edit text**" button in the lower-right corner of the screen.

Now you are in the actual titling menu. The first frame of the scene appears in the background of an operation panel. This screen serves as orientation for text placement, font style, color selection, and type size. Here you can immediately check how your title looks over the selected scene, because the title is automatically updated after every adjustment.

You will see some pre-loaded text already displayed on the Titling display. Delete this text by placing the vertical bar (called cursor) after the last word and pressing the delete key of your external keyboard as many times as necessary until all of the text is deleted.

If you aren't working with an external keyoard, click onto "**Text**" to call up the on-screen keyboard. Now you can delete the given text by clicking on the "**Delete**" key several times. Alternatively, you can click onto "**Boxes**" and select "**Delete**", so that the panel with the default text is deleted. Another box will be available for text entry.
If you have deleted the box with the help of the "**Delete**" button or with the on-screen keyboard, click onto the "**TE**" ("Text Editor") button in the lower right corner or onto the right trackball button, to call up the main menu bar.

First, select a font. Click onto "**Text**" in the main operation panel and then select "**Font**" to bring up a selection window. The text MacroSystem appears in the previously selected font. Select the font Floyd for which you can then set the size. Set the size to 130 and confirm your settings by clicking on "**OK**".

The cursor over the display screen indicates the current text position.

Use the keyboard to enter the text "Video title". Remember, you can use the on-screen keyboard, or the external Powerkey or USB keyboard.
Now you can go on to other settings using the "**Style**" button. A screen appears, in which you

can see the video screen in the top right corner – with an enlarged part of your title. In the top left corner, you can first decide if the letters appear as "**Color**" (single color) or as a "**Pattern**". If you choose "**Color**", the color box opens so that you can choose the color, for example yellow.

After you have confirmed your color box settings by clicking "**OK**", you can decide to add an outline. You can define the strength of the letters' outline by moving the slider next to it (0 = no frame, 6 = strongest outline). Set it to 4 for example. Now you can click onto the "**Color/Pattern**" button to call up the imagepool, in which you can click onto the color button in the lower right area (left to "**Ok**") to call up the color box. Choose a color, for example red.

After you have closed the image pool you can specify the intensity of the "**Shadow**" by using the slider in the "**Style**" window.
Choose setting 6 for instance. Now use the arrow directions to determine the "**Direction**" of the shadow and its "**Color**", e.g. black.
The remaining buttons in the "**Style**" screen can be ignored for this example
After you have closed the "**Style**" window by clicking on "**Ok**", you can specify the "**Alignment**" of the text under "**Line**".You have the choice of left, centered, and right. For this example it should be "**centered**".

You exit text entry by a final click on the "**TE**" symbol and you can call up a new operations panel with the button "**Boxes**". Here under "**Text**" you can use "**top**", "**centered**" or "**bottom**" to place your text accordingly on the page. Choose "**Centered**" and close the menu bar by pressing the "**TE**" button.

Note: If the text box displays a background, then click on the button "**Graphics**" in the main task bar. Then click the checkmark next to "**Choose background**", so that the checkmark turns into a hyphen.

Now you can add another page by pressing the "**Pages**" button. Another operation panel appears. Here, you should press "**Insert**" and answer the posed question "**Insert where?**" by selecting "**Behind**".
The top display of the operation panel should now say "Page **2/2**" meaning that the second of two pages has been added.
Enter the word "**with**" on this page. The settings you have made for color, frame, position, etc. are still valid.
In the "**Pages**" menu click onto "**Insert**" again and add another page (the third). On this page, enter the word "**SMART EDIT**".

Step 2: Archive titles

Now the text "**Video title with SMART EDIT**" is contained on the three pages of the scene.

You can save this text for future projects. In the main operation panel, click on "**Archive**" and then on "**Save**". A list appears containing only the word "**MacroSystem**". This demo text is a short, predefined text that we have provided you. Click on the gray rectangular name field (above the buttons "**OK**" and "**Cancel**"). The keyboard appears and you can enter a name for your title. Enter the name "**exercise**".

Using the archive you can save frequently used standard text for future use in any project. Confirm the name change ("**OK**") and then the save action ("**OK**"), after which the "**Save text**" menu closes.
After you are finished, click "**OK**" in the main operation panel. You are returned to the main titling screen.

Here you can set the range, (the beginning and end of text appearance). Click on the duration value to the left of the Play button under the storyboard. Currently, the title you have added is visible during the entire scene with gradual

transitions between the pages. Using the duration value you can extend the text to other scenes or shorten it (e.g. limit it to one second at the beginning or at the end).

Now you can check your title by clicking on "**Full size**", if your system is provided with this button. In the window that appears you can use the control next to "**Frame**" to scroll through the entire range of the title effect.

Finally, create the title so that you can view it in the finished video.
Calculation occurs automatically if you have activated the option "**Smart Rendering**" in "**System Settings**".

Step 3: Adding credits

You can add an additional title later in the storyboard, e.g. as end credits or to explain a picture scene.

Select in the storyboard a scene that does not yet have a title symbol, and select the effect "**V-Scroll**". This is a vertical scroll, (a text that moves from bottom to top over the screen). You have probably seen this frequently. Add this effect to the scene in the storyboard.

Now click on "**Enter/edit text**" and you are again in the main operation panel of the titler menu. The doubly spaced text appears again in the preview window.
Now call up the title you entered previously by clicking on "**Archives**" and then on "**Load**", after which you select the Text "Exercise" (see "***Archive titles***").
After confirming with "**OK**" the text "**Video title**" appears in the text window.

The words "**with SMART EDIT**" are not displayed here, because they are not on the same page.
In order to see these entries, you can use the "**>**" button in the "**Pages**" operating panel to display the next pages.
A further page for the scroll title means that the second page does not scroll into the screen until the first page has completey disappeared at the top of the screen.

The next page for a V-Scroll means that the next page appears on the screen when the previous page has scrolled off the screen at the top.

Change the text "**Video title**" to "**End Credits V-Scroll**". To do this, move the cursor to the end of the text (after "**title**") and click on the left trackball button to position the cursor there. Now press the button "**Text**" and then the delete key of the on-screen keyboard (long arrow pointing to the left, to be found above the new-line key) as many times as necessary to delete the text. Then enter the text "**End Credits**".

Confirm your entered text with "**OK**". Exit the text entering menu with the "**TE**" button and then the main operation panel with „**Ok**“. You are now again in the main Titling menu. Now you can use "**Preview**" to observe the effect.

If the text scrolls too slowly or too quickly, then you can change the scroll speed accordingly. In this case the text must travel the distance from bottom to top – a longer running time means more time for this and movement is slower.

To change the running time click again on the duration value. Now create the title and play it.

Now that you have some experience in using titling you can create additional titles using the many available functions (e.g. several text panels, different panel sizes, textured type). And the following exercise will provide you with even more help.

(All of the remaining titling functions are explained in the reference, section 5.10.)

4.5 Tutorial 5: Titling 2

In this exercise you will create a title that extends over five text pages and is faded in and out.
You need a scene of about 15 seconds that has a significant border between the upper and lower screen halves. (This means that the bottom half contains the events of interest and the top half should be a light background, such as the sky).

Enter the Titling menu, select the title effect "**In/Out Fading pages**" and add it. Then click on "**Enter/Edit Tex**t" to enter the main operation panel of the titler.

There you see your video. Delete the given text (as explained in the previous exercise) and any other available pages by clicking on the "**>**" button in the upper panel of the "**Pages**" operation panel and then choosing "**Delete**". Repeat this procedure until only one page is left.

Now enter the two words "**You see**" so that these appear on top of the video. Then click on the button "**Font**" in the "**Text**" menu to select the typeface "**Lynn**" in size 90.

Now click onto "**Style**" and choose "**Pattern**". The window "**Select pattern**" appears and you can select, for example, the pattern "confetti" under Product: SMART EDIT and Type: polychromatic.
In addition, set an "**Alpha**" value of 80% and close the window by clicking on "**OK**".

Under "**Outline**", choose "**0**" as value, so that it is deactivated.
Make the same setting for "**Shadow**", because you don't use it in this exercise.

Activate the empty box next to "**Italic**" by clicking onto it. Next, make the text appear in 3D form by moving the "**3D**" option slider to "**8**". For "**Direction**", choose the top arrow (pointing to the top right). Under "**Color/Pattern**" call up the image pool in order to set a light green. Confirm your settings by pressing "**OK**".

In the "**Line**" window under "**Alignment**" you have left the setting "**centered**" as it was and now you can click on the button "**Boxes**" in order to call up the corresponding task bar.
And under "**Text**" select the option "**top**".

Now, add another page. ("**Pages**" operation panel, "**Insert**", "**Behind**".)
On this new page, enter the words "**the title effect**", all previously made settings are automatically used.

Add another page and enter the words "**In/out fading pages**" (with quote marks) as two lines.

The next inserted page contains only the word "**from**", and the last (fifth) page contains the text "**SMART EDIT**".

After you have created these five pages, click on "**Archive**" and save this titling, as you learned to do in the previous exercise.
Then exit the main operation panel of the titler by clicking on "**OK**". You are returned to the titling screen.
There you will see that there are further effect options for the effect "**In/Out Fading Pages**".

For this title effect the options are Fade (indicates when the title should appear)and Pause, (indicates the length of time between two pages.

Retain the default time of 1 second (000.01:00) under **Fade**. For **Pause**, scroll all the way to the left so that you see the time display 000.00:00.

Now create the new title.
Now you know how to use a professional titler that you can vary in many ways and combine with different backgrounds. The different effects can serve you as opening titles, credits, or descriptive text during the film.

You can learn about additional titling functions in the **reference, section 5.10**.

Chapter 5: Reference

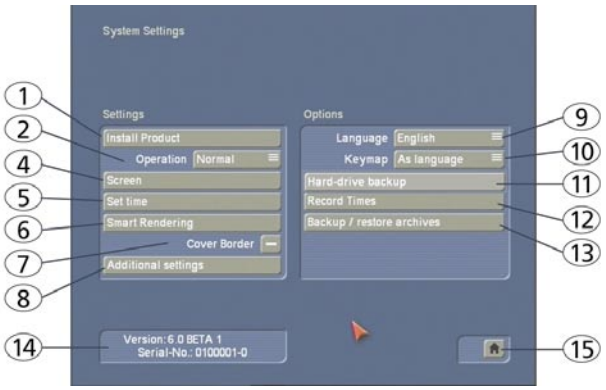
This part of the manual serves as a reference to the individual menus. Look here for information on individual functions or menu items you may be unsure about, as well as additional features not explained in earlier tutorials.

Please note that depending on the system model, the functions explained in this text may vary slightly or may be missing.

VIDEO

5.1 System settings

This menu is used to make general settings.



(1) Clicking on the "**Install Product**" button displays a window that gives you three options. You can use the "**activate**" function to activate software contained on the SmartMedia card or CD/DVD. You do this by first selecting the desired software, after which a window is displayed in which you then enter (through the keyboard) the code obtained from your dealer. The product is displayed in the corresponding selection menu and can now be used. Software demo versions are installed by activating the product without entering a code (see section 3.2 "**Demo Software**").

The "**Hide**" button prevents display of the product and thus also prevents its use.

You can activate the software by telling your dealer the serial number of your system (below left in this menu, item 9) so that you can purchase the code for the software.

By clicking on "**delete**", you can remove the program which is activated in the list above. After having clicked on "**delete**" a warning appears. If you confirm it by clicking on "**yes**", the corresponding software will be removed. It is certainly possible to install it anew afterwards. As an example this function can be used in order to delete demo software which is not required any longer.
Another function in this window is the "i" button. Clicking on this button displays additional information on the selected software (see section 3.2 "**i buttons**").

(2) The "**Operation**" speed can be set here. There are three possible speeds.

(3) If your system is provided with the button "**video output**", you can choose between "**CVBS**" or "**YC**". If your video recorder supports a YC signal, please choose this option.

(4) Click onto the button "**Screen**". Here, first set the option "**Screen**". You can choose between Video and different VGA screen resolutions. The available modes depend on your system model.
Video means that you can use your TV to access the user interface.
The other possibilities are used to connect a computer monitor to be used as a second screen or as an alternative screen (depends again on the system model used).
You can read more on this in the chapter 6 : "**VGA mode**". The system is automatically restarted after being switched to another mode.
After this, you have 15 seconds time to confirm the request with "**Yes**", otherwise the system reverts to the previously used mode.

Once you have made a "**Video**" selection, the buttons below will no longer be selectable. The user interface and video footage are displayed on the TV monitor.

If you have opted for one of the VGA modes, you can (depending on the system) select between "**Single monitor**" and "**Dual monitor**" use.
A one monitor set-up shows the user-interface and video footage on the VGA screen, in two monitor mode, the user interface and video footage are split: Interface in VGA, video on the TV screen.

Using the "**Single Monitor**" mode activates "**VGA play**" button beneath, so that you may use it to determine the type of playback: The options are "**Field**", "**Frame**" or "**Deinterlace**". The "**Field**" option has the advantage that it doesn't create movement artefacts like "**Frame**" does, but on the downside, the vertical resolution is lower. The option called "**Deinterlace**" has complete resolution, much like the `**Frame**´ option, but any stripe patterns within moving objects are reduced as much as possible. Depending on the type of system you are using, the number of visible frames per second may be reduced.
There is alos an "**Aspect correction**" switch. This affects the playback and trimming in VGA mode and contains three options. Set it to "**Off**" to allow for distortions on the VGA monitor. The "**Fast**" setting corrects the aspect ratio so that playback on a VGA monitor is correct. Select the "**Good**" option to get a high-quality display. Depending on the model type, the number of visible frames per second may be reduced.

"**Video**" or "**Field**" are the two options. The "**Field**"" option has an advantage in that unlike "**Video**", there are no movement artefacts -- however, the resolution is lower.

(5) The button "**Set time**" offers the possibility to set date and time of your machine. This function is required in order to let the system start recording automatically (item **(11)**).
Clicking on the button opens a window in which you can choose the "**Year**". Click onto the year, so that a window is displayed in which you can select the year by moving the slider. Afterwards confirm it with "**Ok**".

By clicking onto "**Month**", a menu is displayed allowing you to choose the current month. Afterwards, the dates which are displayed underneath change, so that they correspond to the weekdays of the selected month. Now choose the current date. Then you can set the time by moving the sliders and finally confirm your settings by clicking on "**Ok**".

(6) After clicking on the button "**Smart Rendering**" a window appears, in which you can activate the background rendering for the effects. Just checkmark the box (next to "**Smart Rendering**") to do this.
Click on it again to deactivate the background rendering function. Next, you can see the function "**Cancel Rendering**", which offers the possibility to cancel the current rendering process. Underneath, you can see the number of effects and their total time.
In addition, you can decide how the current effect is to be rendered. For the "**last inserted**" effect, you can choose between "**first**" and "**last**". Confirm your settings and close the window with "**Ok**".

(7) Here you can see the "**Render Border**" function that can be activated by placing a mark next to it. This creates a black border around the edges of the screen, covering any unwanted disturbances during playback.
Please note that the affected border is so thin that is normally not visible on a normal video monitor. Usually, it is only possible to see it during a presentation on a video beamer/ projector for instance.

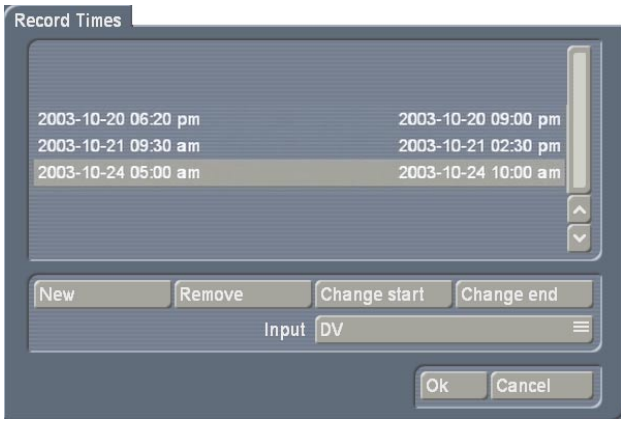
(8) The "**Additional Settings**" button brings up a window that allows you to set the amount of time after which the unit powers down automatically. You can set it (in minutes) to stay on for up to one hour (in the Main Menu) until it powers down or you can deactivate the automatic power off procedure totally.
Here you can also see the function called "**Display bubble help**". This activates (checkmark in the box), or deactivates (dash in the box) the Help Texts. Once activated, Help Texts appear for the many user interface elements that are only represented by symbols. If you leave the screen pointer unattended for about one second, resting upon the function symbol, the text will appear.
This option is not available for separately purchased add-on products.

(9) Click the selection button "**language**" to open a separate menu with items to select. Select the desired language and the switch takes place

immediately.

(10) By clicking on the selection button "**Keymap**", a list is called up in which you can choose the language of the keyboard (also possible for external keyboards). The selection "**As language**" copies the settings chosen in the "**language**" window. But it is also possible to set an independent keymap from the system language.

(11) Clicking on "**Record Times**" opens a window in which you can enter dates and times, so that your system starts or stops recording at the given time.



Thus your system acts as a harddisk video recorder. You can start as many recordings as you like via time control.
A click on the button "**new**" opens the window "**Record start**". Enter the starting time of the recording as described in item **(5)**. After having clicked on "**Ok**", the window "**Record end**" opens which is used to set the time for stopping the recording. After confirming it with "**Ok**", the set time appears in the upper part of this window.
If you define several recording dates and times, they will be displayed in a list. If the recording time is too long, a warning will be displayed.
By clicking on "**delete**" you can remove the recording time activated in the upper list. Be careful, no warning appears!
If you want to correct the times, you can enter the time setting anew by activating the buttons "**change start**" or "**Change end**".
The button for "**Input**" in this menu allows you to comfortably select the source for your system. For example, you could have different sources for different recordings.
After setting the time and having clicked on "**Ok**", your system can be switched off. It will start the recording at the time you have set.
Please make sure that your system is not without power after setting the time.
Please choose the correct video input (menu "**Video settings**") and connect a player, e.g. a TV or receiver. Thus you can record TV scenes for instance.

(12) Should your system feature the "**Hard-drive backup**" button select it. This brings up a selection menu, where you can choose to do a "**Back-up**" (Copying the video found on the system drive to the backup drive) or a "**Restore**" (Sending the data saved on the backup disk to the system disk).
After chosing one of these options the process begins.
You can cancel it at anytime.
Note: The function "**Backup**" allows you to save your video material regularly to avoid a possible loss of data (e.g. if the system hard drive is damaged during transport).
The function "**Restore**" allows you to copy the video material saved on the backup drive to a system hard drive. For further information please see **Chapter 8 "HD Backup-System"**.

(**13**) The "**Backup/Restore Archives**" function allows you to store saved data archives (colors, title texts, audio-effect combinations) to a separate medium and later restore back into the system. This way, you can access your archives data after a full re-installation.
Click onto the "**Backup/Restore Archives**" button and a window will appear – this allows you to choose between "**Backup**" and "**Restore**".
Press the "**Backup**" button to select a target medium such as CD/DVD, an external Firewire hard-drive or a USB stick (for this, you require the Card Drive software). Select one option and press "**Ok**" and you will be asked to enter a name for the document.
Additionally, here you will see all previously saved documents. Confirm with "**Ok**" and insert/connect (USB stick, Firewire hard-drive) medium as requested. If you are using an already burned CD/DVD RW, the system will first delete the contained data – it is not possible to add data to the disc! Then, the CD/DVD will be burned or the data will be saved to the USB stick or hard-drive. You can confirm the procedure by pressing "**Ok**".
If you decide to perform a "**Restore**", you must first choose a "**Source**" (CD/DVD, USB stick or

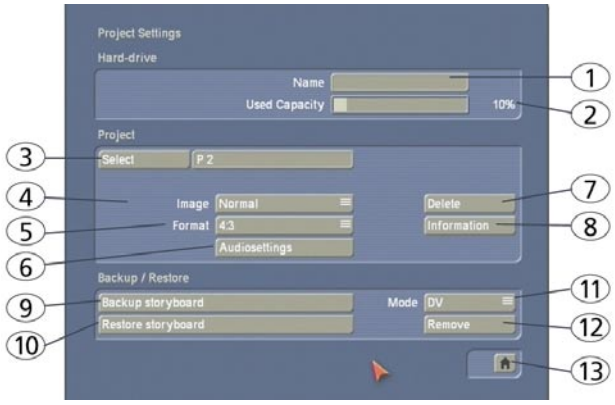
external Firewire hard-drive) and then decide if you wish to "**Overwrite existing files**" (a check in the box). Once you have opted for a medium and pressed "**Ok**", you will be requested to insert the medium or to connect the external medium containing the archived data to your system.

(14) This **information field** displays the OS version and the device serial number.

(15) Clicking on the **menu symbol** returns you to the **Main menu**. Clicking the right trackball button does the same.

5.2 Project settings

In this menu you make the settings for your current or next project. This affects, for example, the project name, image size, and audio quality.



(1) On the upper edge (the "Hard-drive" section) you see the "**Name**" button. Clicking on the gray name-field brings up the keyboard with which you can enter the desired name for the hard drive. You can also see which hard drive is currently in the system. This is otherwise not possible because the label on the hard drive is not visible when the hard drive has been inserted into the machine.

(2) The display, "**Used Capacity**" gives information on the space used on the hard drive (dark blue), and on the total remaining time (light blue). A display for individual projects is not possible because this display refers to the entire hard drive.

(3) Clicking on the "**Select**" button brings up the **Select Project** menu, in which you can select several different projects.
If some projects already contain scenes, the corresponding projects are marked to the right of the project name (with a little dot).
After you press "**OK**", the project you have selected is displayed next to the selection button (e.g. "**P 1**"). If you want to rename the project, click on "**P 1**" (or "**P 2**", etc.). The on-screen keyboard appears so that you can enter another project name. The chosen project name is also displayed in the edit screen above the scene bin.
Only the currently active project can be edited! Exchanging video data between different projects is possible using the Clipboard feature in the Edit screen. You always have access to archived titles and colors.

(4) Under "**Image size**" you have the choice among **Small**, **Normal**, and **Large**. This setting applies only when effects are applied.
We recommend using the default setting **Normal**. This will usually prevent black margins from appearing when using effects.
The image size can be changed at anytime in the current project. It takes effect only when applying effects and titles.

For technically interested users: A video signal conforming to the studio standard CCIR 601 enables the use of 720 samples and 576 picture lines. The real resolution is even higher, but a video picture requires certain portions for synchronization signals, videotext, timecodes, etc. The resolution of 720 x 576 pixels is the maximum allowed area for real video information. But many video sources do not make use of this resolution. This is true for camcorders, laserdiscs, and even for studio devices. A much smaller portion is often used in the assumption that most televisions will not be able to render the entire signal.

(5) The "**Format**" button provides different settings.
In addition to the normal "**4:3**" formats, the system also offers a "**16:9 Anamorphic**" mode.
The option means the 16:9 mode **anamorphic** and contains 576 picture lines.
16:9 is set when starting the project.
This special mode works only if both camcorder and TV conform to the 16:9 standard.
It might be necessary to manually switch the TV monitor to 16:9. If the TV is not switched, then SMART EDIT uses the standard display 4:3.

16:9 display is possible regardless of the format in which the video source has been recorded. Note: The 16:9 format is not available for NTSC machines.
Further, note the formats "**4:3 Progressive**" and "**16:9 Progressive**". Cameras which support the "Progressive" function only work with 25 frames (NTSC: 30) instead of 50 fields (NTSC: 60) per second. If you activate one of the Progressive formats, a warning is displayed saying that you should only use this setting in combination with a Progressive Scan camera. Otherwise you could limit the effect use.
If you have chosen a progressive format for your project, you can proceed to trim, split, etc., with a progressive (full frame) display.
Furthermore, you can use the "**HDV**" format, which is of course ideal for HDV video footage recorded with such a camcorder.
If you choose to work on an HDV project, once you have started editing, it is not possible to revert back to another format for that project.
If you decide to work on a 4:3 or 16:9 project, once started, it is not possible to select a the HDV format any longer.

(6) The field "**Audio settings**" refers to the menu "**Mix**" and consists of two parts:

In the upper area you can specify whether the "**Transitions**" for the inserted transition effects should be "**constant**" or "**lowered**".
A continuous (linear) audio fade means that the audio of both scenes is faded in and out without reducing the volume. This function should be used, for example, when both scenes have similar volume.
A lowered (logarithmic) audio fade means that for monotone background audio in both scenes (e.g. sea shore, traffic) the impression is that the first scene audio is quietly faded out before the second scene audio is faded in with increasing volume.
A continuous fade can sometimes have the disadvantage that between different soundtracks "acoustic confusion" can arise. Depending on the audio of the scenes in question, it will be advantageous to use either the constant or the lowered method.
Note: If you have selected the audio fade after the fact, transitions will not automatically be newly calculated. But you can change each individual transition afterward in the menu "**Mix**". There you activate the left scene and the corresponding sound clip. Then click on the button "**Fade**" and in the window then displayed under "**Transition**" set the desired option ("**constant**" or "**lowered**").

In the lower area of the window you can specify the behavior of the scene soundtracks.
If you set the button "**Audio tracks**" to "**normal**", then the buttons positioned below are disabled. In the gray fields you can see whether the corresponding soundtracks are free or fixed to the scene.
If you select the option "**Selection**" under "**Audio tracks**", then the original audio is fixed to the scene and the behavior of the other soundtracks can be set at will.

Note: Some systems automatically select the best audio sampling frequency (48 KHz). If your system does not support this, there is a manual audio selection within the "**Audio settings**", called "**Audio quality**". Use it to avoid compatibility issues with connected DV equipment.

(7) Clicking on "**Delete**" opens a window which offers the possibility to determine which areas of the selected project can be deleted.
You have three options: "**Delete Storyboard**", "**Delete scenes**" and "**Delete samples**". It is possible to select two or even all three options at the same time. A click on the box next to the option activates or deactivates that particular function.

If you choose all options, all data (video and audio, and all effects) within the currently active project are deleted.
All project settings can now be reset. Project settings are fixed only after video recording or creation has begun.

The following are not deleted:
– other edited projects
– scenes in the clipboard
– archived colors and titles
– effect modules, including those that have been installed later
– installed fonts
– other supplementary programs

If you choose only one function, merely this part of the project will be deleted.

(8) The "**Information**" button gives information

on project name, storyboard length, scenes and effects inserted into the storyboard, and on the total number of existing scenes and samples.

(9) The `**Backup Storyboard**´ function allows you to save the DV or HDV Storyboard to an external medium. This button is only available if there are scenes in the Storyboard.
Make sure to check what the mode of the button next to it is **(11)** – this setting very much determines the type of storage/backup.
Click onto the `**Backup Storyboard**´ button. You must then select the destination medium (CD/DVD or Firewire hard-drive). Then press `**Ok**´ and enter the name for the Storyboard you wish to save.
If you are using the `**HDV**´ or `**DV**´ mode, the first thing to happen is that the non-created effects are rendered. If you are using the `**DV-Backup**´ mode, the footage is left un-rendered (see mode, point **(11)**).
Note: If you are using an already burned CD/DVD RW, the system shall overwrite your data without a warning!
Please remove the medium when the system informs you that the backup was successful, not before. To recover the Storyboard, read the next section.

(10) The `**Restore Storyboard**´ function makes it possible to load the previously saved DV footage Storyboard back into the system.
Insert the CD/DVD or connect the Firewire hard-drive and start the process.
Once the data has been loaded, the automatic split functionality (see chapter 5.5., Point (20)) will kick in – but only if you selected the `**DV-Backup**´ mode.
You will then be asked if the recovered footage is to be added to the Storyboard or to the Scene Bin.
If you saved your work in `**DV**´ mode, the recovered material will be added in the form of a normal scene.
Make your selection and confirm with `**Ok**´ to find out the number of scenes to be created. Confirm again and enter the Edit menu to work with the recovered data.

(11) The `**Mode**´ button has an `**HDV**´ (in the case of an HDV Project), `**DV**´ and `**DV-Backup**´ setting. Before saving your Storyboard, set the option for an `**HDV**´ or `**DV**´ project to save the entire material.
Prior to saving, the all non-rendered effects and audio is created. If you load the footage back into the system with the `**Restore Storyboard**´ function, you will see only one scene in the Edit menu (Scene Bin) – named `Storyboard´.
Setting the option for `**DV-backup**´ on the other hand, results in a backup with additional information so that the Storyboard can be mostly restored again. For instance, the single scene retain their names, the original sound, transition, image processing and titling effects keep their settings. Please note that inserts, the single audio tracks, title texts and the settings of effects which have their own interface can not be recovered (for example, PiP Studio). The same goes for Insert scenes that are coupled with effects.

(12) If you have saved your Storyboard to an external Firewire hard-drive, you can use the button `**Remove**´ to remove all data of the Storyboard that was archived.

(13) This **menu symbol** returns you to the **Main menu**, the same as clicking the right trackball button.

5.3 Video settings

This screen (only available on some system models) allows you to correct the levels of the incoming video signal (in terms of brightness, contrast and saturation), and it is used for selecting the video input.
These are settings that you can change at any time when recording analog footage – even after the project has been edited.

(1) You can specify here the **brightness, contrast,** and **color** of the video material before recording. This allows you to see the footage as it will be digitized.
It is possible, of course, to use Image Processing effects to make corrections to recorded video material after input, but this involves rendering time.
Note: The better the material has been recorded,

the better the result will be. Corrections after-the-fact have their limits – a picture that is too dark can never be as radiant as a picture digitized with the correct lighting, even after using brightening effects. Simply modify the settings until you have attained the desired levels. When your source material changes, e.g. when bad-weather pictures appear, then you can simply readjust the settings.
Note: The settings "**Brightness**", "**Contrast**" and "**Saturation**" cannot be changed, if you chose the input "**DV**".

(2) You can use "**Input**" to switch the video input. (Please note that DV input is only available if the hardware you use actually features a DV port). You can also add analog material, which is then converted by SMART EDIT to DV data. Digital and analog material can be combined in the same project.
The DV input device is automatically recognized and marked. After you have connected the DV recorder, you see that the input, e.g. is titled with "**DV Sony**". In this way you can determine quickly that the connection has been made.

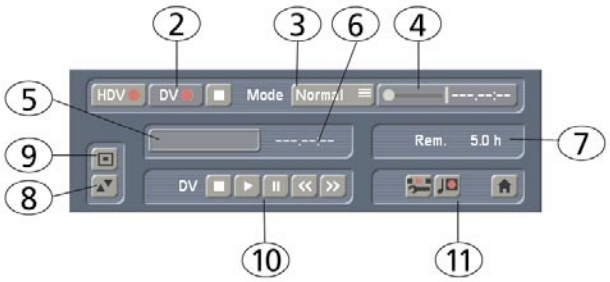
(3) This button allows you to move the Input menu bar from the bottom of the screen to the top, if needed. Click again to return to the bottom.

(4) In case you want to check your video material and don't intend to change settings at the same time, then you can use the button to reduce the menu to a much smaller panel. In this reduced menu only the buttons described under item **(3)** and the button ("**video settings**" menu symbol) to redisplay the entire menu are visible.

(5) Clicking on these menu symbols takes you to the Recording menu or to the Main menu.

5.4 Recording

This screen is used to record your video footage from your camera or deck onto the system.



(1) By clicking on the volume display button you can call up a volume display on the opposite screen edge which serves to adjust the decibel (dB) level before or during recording (not available in HDV projects). Try to set the level as high as possible in order to achieve the best audio quality, but do not overdrive it (stay out of the red area!). You can change the level by clicking on the dB slider below it. The sound becomes quieter (up to –30 dB) or louder (up to 20 dB), depending on whether you move the slider toward the left or right.
Flashing blue or yellow means there are no problems and flashing red represents overmodulation. Clicking on the volume display button again closes the volume display.

(2) Please note that during the recording of source HDV footage, neither picture nor sound can be monitored. The screen displays a grey picture with the running time.
During recording a click on the trackball right button has the same effect as pressing the stop button in the small display You can start and stop recording to not waste drive space with unwanted video. If you want to divide up your recorded video material, after recording proceed to the Edit screen. You can find more information in section "**5.5 Editing**" under splitting.

(3) The selection button "**Mode**" offers you three possibilities:
"**Normal**": means a normal recording.
The setting "**Time**" activates the "**Time**" slider (see item **(4)**), with which you can set the recording duration exactly. After this time, recording is automatically stopped.
The setting "**Photo**" is appropriate for single flicker-free pictures. Casablanca records about a half second of material that is then extended as

a single image to the duration you have set (see **(4)** "**Time**").

(4) The "**Time**" slider is activated by the modes **Time** and **Photo**.
The Time mode allows setting the duration for the still scene up to 100 minutes.
In Photo mode you can set the duration of the still scene up to one minute.
You can always stop recording with the stop button, regardless of the time that has been set.

(5) When a new scene is recorded, the system will automatically name it (S1, S2 etc.). Its name is displayed under the record button. Clicking on the name brings up the keyboard which allows you to give scenes the name you choose.

(6) This fields shows you how long the recorded scene is.

(7) The field **Rem**. shows you how much time remains, meaning how much video can still be recorded. This is not displayed during recording; it is switched to a smaller display. This amount is an estimate. The system calculates the remaining time on the basis of the level of detail of the material already recorded. The value is not recalculated until the current recording is finished.
If the quality settings change, the actual space may be slightly more or less than this estimate.

(8) Just like the video settings, this menu is superimposed over the video. You can see the video during recording and thus always decide whether you want to digitize a sequence or not. The symbol at the lower left with the two triangles moves the panel to the upper edge. This is useful if the panel happens to be covering important parts of your material.

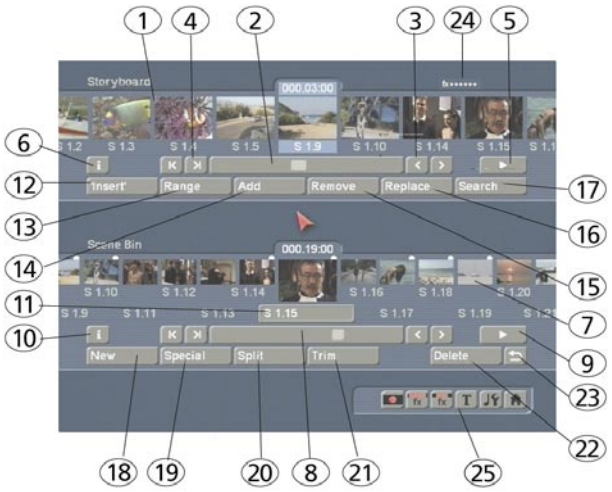
(9) If you don't need this menu during recording (e.g. DV control) then you can minimize it with this button to a much smaller panel. Then the only buttons available are the buttons described under **(8)** and the button to return the normal size record menu.

(10) "**DV control**" is done with these five buttons. You can directly control the connected DV device through the i-Link interface. Please note, however, that not every DV device is compatible, but you will find that most of them are.
Seen from left to right, the buttons are used to: stop the recorder, play, pause, rewind, and fast forward.
Rewind and fast forward have three different effects. Fast rewind or fast forward results if the button is pressed while the recorder is in stop mode. Slow rewind or slow forward results if the button is pressed while the recorder is playing. Clicking the button while the recorder is in pause mode causes movement of a single frame backward or forward.

(11) The four menu symbols bring you directly to the **Edit, Record/Edit, Video settings**, and to the **Main menu screens**.

5.5 Editing

This screen is used for most of your editing work, and for sequencing of trimmed scenes. This is the most important menu.



(1) Here you see the storyboard. This is a tool that has been used since movies were invented. The idea is to clearly lay out all the scenes of a production in order to more easily implement editing principles. A single frame, (the first pictures of a scene), are used as symbols ("thumbnails") to represent the scene.
A glimpse at the storyboard allows you to grasp the whole story without having to review all of the material. Traditionally, the storyboard was a large board composed of hand-drawn pictures.

Your system uses an electronic storyboard. Scenes are selected from the scene bin (item **(7)**) and put into order on the storyboard, located in the upper section of the screen. In the storyboard the selected scene is in the center.

The selected scene length (duration) is displayed above the scene to highlight it. Clicking on a scene in the storyboard causes it to be moved to the center (often referred to as the "selected" or "active" scene).
Seven scenes can appear in the visible portion of the storyboard. But there is no limit to the number of scenes that may actually be present on the storyboard. The storyboard can be scrolled to the left or right. The starting point is to the left, and scenes are played sequentially from left to right.

(2) To scroll through the storyboard click on the **slider** below the storyboard and roll the ball on the trackball to the right or left.

(3) The **buttons** next to the slider can be used to move from one scene to the next in the storyboard one scene at a time.

(4) The buttons "**|<**" and "**>|**" move you to the beginning or end of the storyboard.

(5) You can use the **Play button** to the right of the slider to play the storyboard beginning with the selected scene until the end of the storyboard (or until you stop playing either by pressing the Stop button which is now visible, or by clicking the right trackball button.)
You also have a Pause button which you can use to stop the playback until you press the Pause button again (or press the Play button). The last frame appearing before the Pause button was pressed remains as a single picture on the monitor until playback is resumed.

(6) Clicking on the "**i**" button, a window is called up showing information about the storyboard. You'll see the project name, the current position of the storyboard (the time is displayed), the length of the whole storyboard and the remaining length (after the current position).

(7) Recorded scenes appear automatically in the **Scene bin** in the lower section of the screen. They are represented as small thumbnails (the first frame of the video scene). In video mode (not VGA) up to eleven scenes can be viewed simultaneously in the Scene bin. For more than eleven, the slider (item **(8)**) is then used to scroll to the desired scene. Scenes from the scene bin that have been inserted into the storyboard are indicated by a small white point in the upper right corner of the scene.
In the scene bin (right), you can see the project name you chose.

(8) The slider below the scene bin is used to select the scenes to be displayed. The buttons next to the slider can also be used to move through the Scene bin one scene at a time.
The buttons "**|<**" and "**>|**" are used to jump to the beginning or the end of the scene bin. The "**<**" and "**>**" buttons will move through the scene bin one scene at a time.

(9) The **Playback button** is to the right of the storyboard slider. This button is used to playback the scene displayed in the center of the scene bin.
Stop and Pause buttons are also available.

(10) Clicking on this "**i**" button displays a window showing information about the activated scene in the scene bin. In the upper part of this window you'll see the timecode, the recording date, the recording time and the format.
Further, you can call up the keyboard by clicking on "**Enter/change comment**" in order to add your notes to this scene, which then will be displayed in the lower box.
Clicking on "**Ok**" confirms the notes, so that it will be displayed in this information window when it is called up again.

(11) In case you have not yet renamed the scenes in the Record screen, you again have the chance here to give the scenes your own names. Simply select the desired scene in the scene bin and then click on this **button** to bring up the on-screen keyboard. If you have the PowerKey option, then you can use this keyboard to clear the old name and enter a new name.

(12) Many users require "overlapping" of certain video sequences with other scenes without changing the original audio. Example: a music video (see **Chapter 4, Tutorial 2**). A complete recording of the singer is available. Certain portions of this recording are to be substituted with other scenes, but the view of the artist singing is to reappear several times. The movement of the singer's lips should always be synchronized with the music. This means that the original audio does not change, even though scenes are changed.

SMART EDIT offers an easy way to do this: With an Insert-edit, the selected scene in the scene bin is overlaid onto the storyboard. Only the video, not the audio of the scene is overlaid.
Clicking on "**Insert**" overlays the selected scene in the storyboard with the selected scene from the scene bin. The scene in the storyboard (background) is then partially or completely covered with the insert scene (foreground). The background scene must, of course, be longer than the foreground scene.
The range (start position, length) can be set freely and changed at any time, even after the Insert is placed. Every click on "**Insert**" leads automatically to a Range menu.
The starting point, which is by default set to the first frame of the insert, can be moved towards the end ("**Start**" button).
To do this, you have to select "**Position**". Now you can see the background scene. To trim the insert-scene either from the front or from behind, switch the selection button to "**Trim**" so that you can see the "**IN**" and "**OUT**" buttons. During this setting, you can see the background scene. Set the selection button to "**Trim E**" so that you can see the insert-scene instead.

The so-called "**background scene**", in other words the story board, can be split in three parts:

1. the background scene before the insert
2. the Insert scene
3. the rest of the background scene after the insert

This division allows you to place any number of insert sequences onto a single background scene.
Inserts are indicated in the storyboard by a symbol (two overlapping rectangles) in the upper part of the scene in the storyboard and can be Removed at any time.
The button "**Remove**" offers the possibility to delete the first and the last part of the background scene in front of or behind the insert scene. Overlapped background sequences are automatically put back together.
Neighboured insert scenes can certainly be connected with a transition effect.

(13) After you have added an insert and the scene is still selected in the storyboard, you can use the "**Range**" button to modify inserted scenes.
These scenes can either be shifted (Set the mode to "**Position**", and then click "**Start**".) The Insert scene can also be re-trimmed at the beginning or at the end (using the "**IN/OUT**" buttons in Trim mode). The function "**Trim E**" allows you to see the insert-scene while trimming.
For Insert scenes the user is brought to the usual Range menu. Here also you can display and hide the audio wave form with the loudspeaker symbols (**section 3.2**).
If you click on the "**Range**" button while no insert scene is activated, you can reach every position of the activated scene or of the entire storyboard. This function is helpful if you have added a very long scene to the storyboard and want to view its middle position. You can reach the desired position by the help of the button "**Position**" or with the arrow buttons – the slider to the right shows the current position in relation to the complete storyboard. The position can also be changed by clicking the play button; the stop button stops playback. If you exit the "**Range**" menu by clicking on "**Ok**", the new position is confirmed.

(14) Scenes are added to the storyboard from the scene bin. The selected scene in the scene bin is added to the storyboard by clicking the "**Add**" button.
The added scene always appears after the currently selected scene in the storyboard.
There is one exception. When the very first scene is the current scene in the storyboard, the user is asked by the system whether the scene to add should be put **In front** or **Behind** the first scene.
There also exists the possibility to cancel.
If you add the scene before the first scene then you will be asked – if there is audio on a music track – whether the music track should be shifted backward. Answering Yes causes all audio tracks to be shifted, No causes the music tracks 1 and 2 (thus the sound tracks 3 and 4) to stay at their time position, and this causes them to slip under another previous scene.
When the scene has been inserted, the original in the scene bin can be deleted or trimmed without affecting the storyboard scene.

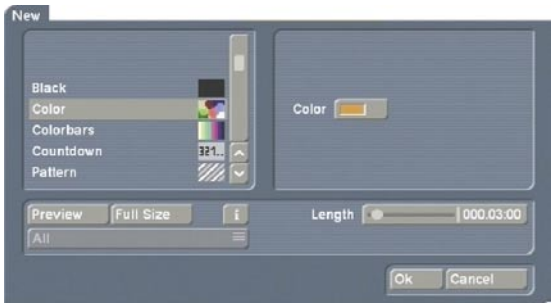
(15) The function "**Remove**" deletes the scene located in the center of the storyboard from the storyboard. An "**Insert**" scene can also deleted, and this uncovers the background. If you have

already created audio and the scene to be deleted is affected, then you will receive a warning message telling you that an audio sample will be deleted.

(16) Clicking on "**Replace**" causes the selected scene in the center of the storyboard to be replaced by the active scene in the scene bin. This can be a completely different scene, or the same scene with different In and Out points.

(17) The "**Search**" button makes it possible to find the same scene in the scene bin that is currently selected in the storyboard (assuming it has not been deleted or renamed). After clicking on "**Search**" the scene in the scene bin is activated and can, for example, be trimmed or split. (This cannot be done to a scene in the storyboard). Finally, the scene in the storyboard can be replaced with the newly trimmed scene. If you have deleted the scene from the scene bin, then after you click on "**Search**" the message **"The scene was not found. Should it be re-created?"** appears. If you then click on "**Yes**" and the scene will again appear in the scene bin. This function can be activated at any time, even after restart, after which a deleted scene cannot normally be re-created.

(18) "**New**" creates a scene whose duration ("**Length**") can be set up to 1 minute and whose contents can be set from a selection list.
This is very interesting for leaders and trailers (black video), but also for certain crossfade effects.
Clicking on this button causes a list of various options to appear. The following new scenes are available in the standard version:



Further effects are available on additional SmartMedia cards or CDs/DVDs that you can obtain either as full or demo versions from your dealer.

You can select a new scene simply by clicking on it or by activating the slider control.

a) Countdown
This new scene creates a countdown, the duration of which you can set. A countdown number is shown each second. You can also specify the numbers and background color with the help of the color box.

b) Color bars
This scene creates a striped test image according to the standard IRE 100 (for PAL) or IRE 92.5 (for NTSC) with changeable duration. In professional usage, it is normal to have a colorbar test image several seconds before each video project.

c) Color
This option creates a one-color scene that is mainly used as background for titling. Selecting the option "**Color**" opens the color box so that you may select the color.

d) Pattern
After you select this button, you see the "**Select pattern**" button to the right. Click on this button to open a screen in which you can select a pattern from the Image Pool. More information on this image pool can be found in **section 3.3** of this manual.
The special effect called "**Pattern**" applies the aspect ratio of the used pictures and patterns to the 16:9 format (in PAL and HDV). Activate the function "**Enable distortion**" to stop this correction.

e) Black
This mode creates black video that can be used as background for titles or combined with the transition effect Crossfade for fading into and out of a video.

Below the selection list you find the "**Preview**" button. This allows you to view a moving video preview.
Clicking on the button "**Full size**" (if your system is provided with this button) brings up another menu that again displays the effect options in the area to the right.
In the left area you see the "**Frame**" slider under the effect name. With this slider you can set the point in time in the new scene you wish to see.
Below you see the button "**Display**" which you use to select either "**Original**" (the representation of the new scene you have just selected) and "**Compare**". The last option divides the screen

into two parts. Part of your new scene is displayed in the right half of the screen. In the left half of the screen a scene is displayed that you can freely choose from the scene bin with the button "**Choose scene**" positioned below. This comparison function lets you correct images (adjust coloring).
With "**OK**" the settings for the effect options in this menu are accepted and you are returned to the "**New scene**" window. With "**Cancel**" you exit the "**Single image**" menu without having made any changes.
The arrow button serves to move the single-image menu to the upper screen edge.
You also have the option to reduce the panel with the button located above it.
To the right of the preview buttons is the scene duration, which you can set for up to 1 minute.
Clicking on "**OK**" returns you to the Edit menu.
The new scene, (named after the effect chosen), is now available in the Scene bin.

The selection button displayed underneath the "**Preview**" button offers three settings. The function "**All**" shows all possible "**New scenes**", which can be found in the system. "**Default**" shows the scenes, which are integrated in the system and "**Optional**" shows only the scenes, which have been installed afterwards.

(19) In the "**Special**" menu you find various special effects and all image processing effects.

Listing of all **Image Processing** effects under this item has a special reason: multi-layering.
If you want to edit a scene with several Image Processing effects then you must first activate the scene in the scene bin. Then select the Image Processing effect from the list in the "**Special**" menu, (not in the Image Processing effects screen). The Image Processing effects listed in the "**Special**" menu are not applied to a scene in the storyboard, instead a copy is made of the active scene in the scene bin. The copy incorporates the effect, and its name is supplemented with SP, SP 2, etc. You can repeat this procedure at will.
(see also **section 5.8 Image Processing effects**, item **(12)**)

Some of the **special effects** (the ones listed in the upper part of the list—above the line) are only available here. These include: **Backwards, Clipboard (availability depends on system used), Copy, Ethernet-Transfer (availability depends on system used), Jitter, Photo-Transfer (availability depends on system used), Quick motion, Scene --> audio Sample, Slow motion, and Still Scene**. These effects do not appear in the Image Processing screen.

Here, too, several effects have a "**Preview**" and (if your system supports this function) a "**Full Size**" preview option. To the right you find the effect options, to the left you see the "**Frame**" button under the effect name. You use this button to set the exact frame of the scene you want to view.
The button "**View**" provides four options. With "**Original**" you can view your original scene, with "**Effect**" you can view your scene with the special effect applied, and "**Orig. + Effect**" puts the original scene on the left screen half and the applied effect on the right half, so that you can directly compare them.
The option "**Compare**" divides the screen into two parts. To the right you see your new scene (with effect) and to the left a scene that you can freely choose from the scene bin using the button "**Choose scene**" positioned below. This enables, for example, an exact color adjustment. The effect options can be set directly in this window. You'll even get a real-time preview without having to confirm the selection with the slider.
You accept the settings you have made for the effect options by clicking "**OK**" and you are returned to the Special screen. Clicking "**Cancel**" returns you from the full-size menu, but without accepting any new settings you may have made.
Further on you'll see a selection button underneath the "**Preview**" button, which offers the following three functions:
The function "**All**" shows all programs which are to be found in the system. "**Default**" shows the programs, which are integrated in the system and "**Optional**" shows the programs, which have been installed separately only, e.g. the additional software. You also have the possibility to let just one program be displayed in the effect list. This

function is helpful if you have installed several effect packages, but only want to work with one at a time.
The arrow buttons serve to move the single-image menu to the upper screen edge.

– Backwards
Clicking on the button "**Backwards**" creates a scene with the extension "**RW**" which has the same length as the original, but runs backwards. The audio is also run backward. You can mute the audio in the "**Audio Mix**" screen if you don't want to hear it.

– Clipboard (availability depends on system used)
This is a function for temporary storage that allows you to move scenes to tother projects.
If you click here, you see on the right of the window the four buttons: "**Clipboard -> Project**", "**Scene -> Clipboard**", "**Remove scene**" and "**Scene from project --> Clipboard**".

If you click on "**Scene -> Clipboard**", the scene previously selected in the scene bin is automatically inserted onto the clipboard.
If there is no active scene in the scene bin, the message "**No active scene!**" is displayed.

If you want to load a scene from the clipboard, then first select the scene in the scene bin after which the retrieved scene should be positioned. Then click on "**Special**", then on "**Clipboard**" and select "**Clipboard -> Project**". The "**Get scene from clipboard**" menu is opened. There you can select the desired scene. If you wish to select multiple scenes, make sure to mark the box above the vertical slider is checkmarked. In some cases, you may need to click onto the box once or twice to turn it into a checkmark (see chapter 3.2). You can then select one or multiple items; you will see a checkmark in front of the selected scenes. If you wish to select all of the scenes, you can either select all scenes one by one, or you have to change the box to display horizontal stripes so that all scenes in the list are selected automatically. Now click onto "**Ok**" and exit the "**Special**" screen again using "**Ok**" or "**Cancel**".
You then see the inserted Clipboard scenes in the scene bin. The scenes might have new numbers if the scenea or scene namea are already present in the scene bin.

If you click (in the clipboard) on the function "**Remove scene**", the "**Remove scene from clipboard**" menu is opened and you can select the scene to be deleted from the clipboard. Again, multiple-selection using the box checkmark is possible. Then you only have to click on "**OK**" and the scenes are deleted.

Note: If you click on "**Remove scene**" you see that in the window displayed the "**OK**" button is disabled (appears in dark gray) and thus cannot be clicked. This is a safety measure so that you don't accidentally delete a scene. If you really want to delete a scene, then click twice on the scene to be deleted (even if it appears in gray) and then click on the "**OK**" button that is now enabled.

The function "**Scene from project --> Clipboard**" is used to choose scenes in other projects without entering the project settings.
Clicking on the button "**Scene from project --> Clipboard**" opens the screen "**Select project**", in which you can choose one of your Projects, from which you want to export a scene.
After marking a project and having clicked on "**Ok**", the scene bin of the activated project opens from which you can choose the desired scene. After confirming with "**Ok**" the scene is transported in the clipboard. Now you can click on "**Clipboard --> Project**", so that a window appears in which you can mark the scene you just exported. After confirming with "**Ok**", the scene will be imported into the scene bin of your current project.

The clipboard serves principally to store video scenes temporarily in order to use them in other projects. The clipboard can be accessed from any project.
Of course, it is also possible to copy DV material into an HDV project with the aid of the Clipboard.
If you switch into another DV project and use new project settings, then the scenes already contained in the clipboard are marked with an asterisk and may not be usable. If you select one of these scenes in order to insert it into the scene bin, the "**These scene properties do not conform to project settings!**" message appears.
Note: The scenes contained in the clipboard are deleted when you turn off your machine.

– Copy
A scene can be copied as often as desired within the "**Edit**" menu without requiring additional space on the hard drive. Copying also requires no time.
You can simply select one of the scenes by clicking on it. The outline of this scene changes to blue. Clicking on "**Copy**" creates a copy immediately.
The reason for copying is so that you can trim a copy independently of the original.
For example, you can use several seconds of a long take in the opening title and then insert the complete scene later at a different point in the storyboard.
SMART EDIT frequently creates copies automatically, (for example when splitting, inserting into the storyboard, and when creating a special effect (e.g. "**slow motion**").
The "**Copy**" button is therefore meant only for the purpose described above.
The copy appears in the scene bin and receives the name of the original scene extended with "**.K**", for example "**vacation.K**".

– Ethernet-Transfer (availability depends on system used)
This is a program which is part of the SMART EDIT system software. Further information can be found in chapter 9 „**Ethernet Transfer**".

– Jitter
Have no fear – SMART EDIT processes your best and most detailed material without jitter. But sometimes a jitter or stroboscope effect is desired to attain a change of pace or to give your video an artistic note.
Simply pick a scene, select "**Special**", click on "**Jitter**", then set the Still time (still time 000.00: 04 = one image remains as it is for a length of time corresponding to four frames), and in "**Type**" select between "**Half frame**" and "**Full frame**". Now you have created a stroboscopic scene that has an extension "**RU**". The option "**Full Frame**" has an improved picture quality and is recommended for scenes with little motion. For scenes with considerable motion the option "**Half Frame**" is recommended.
Audio is not affected by Jitter and remains synchronized.
A preview of this effect is not possible. If you click on the "**Preview**" button, a white, crossed-out circle appears.

– Photo-Transfer (availability depends on system used, optionally available for other models)
This is a program used for importing and exporting images to and from photo storage cards (so that they may be used in other software). Please read the online help (i-button) or download the respective pdf file from our website for more information.

– Quick motion
"**Quick motion**" works principally the same way as slow motion, but creates a new scene that runs faster than the original. Here you can specify a speed-up factor between 2 and 10. Uneven values are recommended in order to obtain full resolution. The new scene has the suffix "**ZR**".
You calculate the length by dividing the time of the original scene by the specified speed-up factor.
Here, too, a preview of this effect is not possible. If you click on the "**Preview**" button a white, crossed-out circle appears indicating that preview is not possible.

– Scene --> Sample
This function copies the original audio of the active scene contained in the scene bin to the audio sample list of the audio menu. The new audio sample is named the same as the video scene it was created from. In this way you can use the audio of one scene for other scenes.
If you click on the "**Preview**" button a white, crossed-out circle appears meaning that preview is not possible.

– Slow motion
"**Slow motion**" creates a scene that is a copy of the original but which runs more slowly. You can specify the delay factor with a slider. The higher the delay factor, the slower the scene. A value of 2 (the smallest possible value) creates a scene that runs at only half the speed of the original. If the original scene was, for example, 4 seconds long, then the scene in slow motion is 8 seconds long. To calculate the length of what the new scene will be, multiply the scene length with the delay factor).
The finished scene with the extension "**ZL**", can be trimmed like any other scene and placed in the storyboard. Effects can also be applied if needed.
SMART EDIT plays the scene more slowly than the normal frame rate. Movement can be jumpy. The extreme slow motion known from sports

transmissions is only possible with the use of expensive special cameras that can film at a much higher frame rate per second.
A preview of this effect is not possible. If you click on the "**Preview**" button a red, crossed-out circle appears indicating that preview is not possible.

– Still Scene
Frequently a still scene is required in a video. For example, when introducing "actors". SMART EDIT can quickly create such stills.
The selected scene in the Scene Bin is simply frozen at its first frame for the Length of time set (up to 1 minute), using the slider to the right. Any remaining part of the scene after the first frame is not used to create the still image.
If you want to have a specific still image that is not the first frame in the scene, then simply copy the scene and trim it down to where the first frame is the desired one, then apply the Still Scene function. The created scene has the extension "**SC**".
Under **Type** you have the choice between **Half Frame** and **Full Frame**, whereby Full Frame has a better quality and is recommended for scenes without too much motion. "**Frame**" means that SMSRT EDIT tries to remove unwanted "artifacts" which occur during fast movements or also during quick camera pans. If the movements are not as dramatic, you will gain better results and a very calm still by choosing "**Frame**". In some rare cases, it may be better to use the "**field**" option. There is no audio for still images.
The remaining effects in the Special menu are the same as the Image Processing effects (The individual **Image Processing effects** are explained in **chapter 5.8**).

(20) In general, you will record scenes that have more than one camera setting (take). These scenes must usually be split up in order to make the video you intend. You can skip this step only if you want to keep the complete footage as is without transition effects.
Clicking on the "**Split**" button brings you to the Split menu:

Splitting can be compared to cutting a roll of film.
The film is still on the roll. A segment of film, (the first take in the scene selected in the scene bin), is pulled out of the roll. This happens by clicking on "**Split position**".

The trackball can be used to scroll through the entire scene. Select the last frame of the first take and click on the left trackball button. Check (and correct if necessary) with the arrow buttons ("**<,>**") that you have hit the exact split points. The audio wave form (**section 3.2**) can help you. You can turn if on and off with the loudspeaker symbol. Audio "scrubbing" can help you with splitting by allowing you to make splits according to specific moments in the audio.
Now you have isolated the first take. The segment is highlighted in light blue. You can playback the segment (and rename it, if desired). You must now decide whether the segment is valuable or can be deleted. Clicking on "**Use**" causes the segment to be "cut" and placed into the scene bin, where you can access it later. "**Drop**" skips the segment and moves on to set the next the split position in the scene.

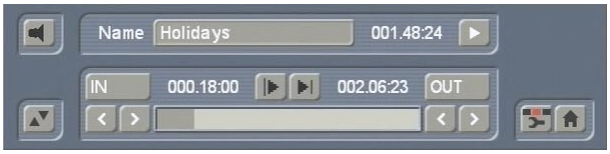
SMART EDIT does not delete any video material during this procedure. The individual scenes are only copied ("**Use**") or not copied ("**Drop**"). The original scene with all takes (the "**film roll**") remains unchanged until it is intentionally deleted in the Edit menu.
After clicking on "**Use**" or "**Drop**" you continue to work with the rest of the roll. Another strip must be taken out and judged either as good ("**Use**") or bad ("**Drop**"). The last scene is automatically displayed as ".**Rest**" in the scene bin. This enables you to easily interrupt your work and to continue later with the ".**Rest**".
An additional function is splitting a scene in series through the "**Index**" button. Click (in the splitting menu) on the Play button so that you see the "**Index**" button. While the video is running with audio, each time you click on the "**Index**" button a split position is set. Afterward the split segments are positioned after the original scene in the scene bin. This function serves to roughly split up a scene before you begin with final editing.

In addition, you can make use of the automatic splitting function if the video material has been recorded via DV.

Click on the "**Auto**" button to cause your footage to be automatically split.
Once you have clicked onto `**Auto**´, you can decide where the divided scenes are to appear. You can choose from the options `**Add to Storyboard**´ and /or `**Add to Scene Bin**`.
The newly created scenes will appear directly after the currently selected scene. Please note that the system cannot add scenes in between Insert scenes in the Storyboard.

The video scene that you have filmed most recently is split up very quickly according to shot changes. (If there are no camera changes, no splits will be made.)

(21) Scenes must generally be trimmed before they are suitable for production. Jittery and blurred images can be removed down to the last unsuitable frame.
Clicking on "**Trim**" brings up the trim menu.



Here you can do fine editing for each scene. You can set the scene's In point (start, first image) and Out point (end, last image) anywhere you want. This is similar to an analog cutting board, but without any waiting time.
Clicking on "**IN**" displays a much smaller strip that enables you to scroll through the scene and set the new In point. The blue area shows how much of the scene is still active, the gray area to the left shows the "trimmed away" part.
The time display to the right of the blue bar shows the length of the scene. Once you have found the correct starting image, confirm by clicking on the left button and the "**Trim**" menu appears again.
You proceed in the same manner with the Out point. You can carry out fine editing by using the arrow keys (below the "**IN**" and "**OUT**" buttons) to step through the individual frames one at a time. You can play the trimmed scene to check it by clicking on the Play symbol (all the way to the right).
You can display the audio wave form and use audio scrubbing (**section 3.2**).
This procedure simplifies the creation of clean splits.

Note: When trimming the IN-point, the system always displays the first available even field. When trimming the OUT-point, the system shows the odd (later) field.
When splitting, the first field is even, when positioning, it's an odd field. This serves a more clean way of cutting.

With the two buttons next to the time displays for the start and end images you can play the first and last 3 seconds of the scene.
Note that segments of a scene removed by trimming can be reinstated at any time by repeated trimming.
To the right and below you can directly activate the Edit screen and the Main menu with the menu symbols.

(22) You can delete a scene at any time. Clicking on the "**Delete**" button deletes the currently selected scene in the scene bin.

(23) In case you want to retrieve deleted scenes, you can use the UnDo button (curved arrow) to be found to the right of the "**Delete**" button. With the **UnDo** button you can retrieve the last ten most recently deleted scenes. Deleted scenes are lost permanently when the system is restarted, when switching between two projects, and when there is no more space for recording (video or audio).
This button can be used to reinstate scenes that you deleted in the scene bin and now have removed from the storyboard.
Tip: You can use the "**Delete**" and UnDo functions to easily sort scenes in the scene bin. Delete the active scene, activate another scene, and then click on UnDo. The scene removed from the scene bin is now reinserted just after the activated scene.

(24) As soon as you insert effects (which need to be rendered) into the storyboard or activate them in the "**Special**" menu, you'll see one dot per effect in the upper right corner of the screen. If the background rendering is activated, the inserted effects will be rendered one after the other. The dot of the currently rendered effect flashes.
In the System Settings, you can determine if rendering should start with the last placed effect or if the effect is to be rendered at the end.
The rendering will be activated either with the button "**Smart Rendering**" in the "**System set-**

tings" (see chapter 5.1, item **(6)**) or by clicking onto this display in the upper right corner (as-well as in other menus, which support inserting effects), which also opens the window.
After rendering was started, you can continue editing - the rendering will be done in the background.
The scene with the rendered special effect is automatically placed right behind the original scene in the scene bin.

Note: The display allows a maximum of 10 dots. If there are more than 10 effects (which have to be rendered) inserted, you'll see three little dots, which means that further effects are waiting to be rendered.

(25) To the right below you see six menu symbols for the following menus: **Recording, Transition effects, Image Processing effects, Titling, Audio mix, and Main menu**.

5.6 Finish

In the Finish menu a completely finished project is recorded out to a DV or video recorder. If your system is provided with a DVD writer and the software "DVD-Arabesk", you can record your finished video to DVD (to read more, go to chapter 5.6 in the "Smart Edit - 2nd edition" manual or in the separate manual that is included with "DVD-Arabesk".)
You can finish creating all video and audio.

(1) The counter at the upper right displays the **length of the storyboard**, which is the total length of your video project. The total length includes not only the scenes you have taken from the scene bin but also all additions such as color scenes, black intro scenes, etc. You now know how much storage capacity you will need for your output media (VHS, DV, etc.).

(2) This field indicates whether the effects and audio samples are **"Created"** or still **"Unrendered"**. Even if all effects except one have been calculated, the display will show **"Unrendered"**. If all effects have been created, this button will be inactive.

(3) It is often easier to let all effects and audio mixing be created overnight or during work breaks. You can use the **"Create"** button to carry out pending calculations in order automatically. (This is commonly referred to as Batch-Rendering.)
A display tells you which effect of the total is currently being created and the light-blue progress bar shows the progress of the entire creation process. Please note that this is an approximation because the calculation times for different effects may be different. Some effects (e.g. the 3D effects) need more calculation time for every frame and this may lead to a certain imprecision in the remaining time displayed.
Tip: If you turn off the machine while creation of an effect is in progress, the calculation will be finished before the machine actually powers down.

(4) Clicking on the **"Choose Range"** button brings up a menu in which you can specify a segment of the storyboard (using the **"IN"** and **"OUT"** buttons and the arrow buttons) to be recorded out. Here you can also use the wave form (**section 3.2**) to help you in deciding on the segment.

(5) The **Record to VCR** function serves to record your video project out to another device.
If you want to record your material on a VCR, then select **Analog** and then click on the Play button next to it. Your video plays and is recorded out to the VCR.
If you want to record your material to DV, select the option **"DV"** or **"DV-Backup"** and use the DV Controls **(6)**. The differences between DV and DV-Backup are explained in chapter 5.2 under point **(11)**.

Of course you can record video material with the aid of suitable capture programs to your PC's hard-drive and edit it there.
If you are editing an HDV project, you can now also output your video in HDV. Before

outputting, the system must however first render the effects (even if already rendered in DV).
Depending on the system you are using, the high resolution of the video and the sheer data size can result in a longer rendering period.

(6) If you would like to control your DV device (camera, deck, etc.) from your system, click on the button **"DV Recorder Controls"**. You can control your DV device using the control panel now displayed.
When you are ready click the **"Record to VCR"** button located below the control to start recording of your footage on DV tape. This process is not shown on the monitor.
We recommend putting a few seconds of empty scene at the beginning of the storyboard. The recorder can then begin recording while the empty scene is being played. This is also recommended for the end of the storyboard – this avoids accidental recording the SMART EDIT user interface.

The record-out function works only when all effects and audio tracks have been completely created (also read item **(3): "Create"**).

(7) In the bottom area of the Finish screen you see a window with a selection list in which the program DVD Arabesk is listed, if you are using a DVD writer.
After you have created the complete video project, you can click on the **"Launch program"** button in the area to the right in order to run DVD-Arabesk.

If you have installed SMART EDIT as an update, you probably have version 1 of "DVD-Arabesk" installed. Please see the "SMART EDIT – second edition" manual, chapter 5.6 for the relevant description. The programs "DVD-Arabesk 2" and "DVD-Arabesk 3" come with a separate manual.

Note: The DVD-Arabesk software may differ slightly from the description below on some systems.
In the "**Image quality**" section, you may see the "**Rendering**" button, which provides you with three options, namely, "**fast**", "**normal**" and "**intensive**". These options allow you to influence the picture quality of the computed film.
In some cases, you cannot play an inserted DVD or a film created using DVD Arabesk. In that case, you can therefore ignore the playback functions described in Chapter 3.2 of the DVD Arabesk manual.

(8) `**Ksebara**´ is another new item in the list. This function is for using DVD-Arabesk to convert finished DVDs back into a video scene in Smart Edit.
Click onto the `**Import**´ button and select `**Show content**´.
Now determine which films are to be imported form the DVD (multiple selection possible - see chapter 3.2). Click onto `**Ok**` or `**All**´ (if desired) and wait until the import process is done. This may take some minutes.
For every film, a separate scene will be created and added to the Scene Bin of the current project.

Please note: The quality of these scenes depends on the `**Picture quality**´ you have chosen for burning DVDs and is likely to be lesser. The reason for this is that DVD films contains MPEG2 compressed material - this needs to be re-converted again to DV format.

(9) Clicking on the menu symbol brings you directly to the Main menu screen.

5.7 Transition effects

**When your project has been completely arranged in the Edit screen, and you are pleased with the results (but with hard cuts between the scenes), then you can apply transition effects. Transition effects are transformations from one scene to the next. In traditional film editing these transitions are known as A/B roll cuts.
You can carry out crossfades, wipe fades, and color fades, but also trick transitions only possible in digital systems. The transition effects are always inserted between two scenes in the storyboard. Some complex transition effects must be created. Creation can be time-consuming, depending on the effect desired. For this reason it is possible to preview the effect in a small window. You can then "batch-render" in the Finish menu (see 5.6, item (3): "Create").**

(1) The "**Transitions**" screen shown above displays the storyboard you are already familiar with. But here, two scenes instead of one are displayed in the center.
You thus see two time displays in the upper panel. You can now move the scenes meant for the transition to the middle.
A further difference is the Play button which in this menu only plays the effect with 1 second before and after, and not the entire storyboard. If you have not already inserted an effect, clicking on this button plays the last second of the first scene and the first second of the second scene. This enables you to view hard cuts even between very long scenes.
The slider and the arrow buttons are used in the same way as in the Edit menu.

(2) You can choose the desired transition effect in the effect list by selecting directly or using the slider. Some of the effect symbols are marked in the list with a blue flag in the upper-left corner. This means that the effect is real-time affected (availability depends on system used) and normally does not have to be rendered in DV projects. A red flag identifies a demo effect, (real-time or not), that must be calculated and is played with a superimposed "demo" text.
To purchase and unlock an effect, contact your Dealer.
Note: In going to print, not all effects were HDV capable and could therefore not be made available in HDV projects. Additionally, in HDV projects, no real-time effects are available.

(3) After you have selected an effect that has further options, the effect options are displayed in the field to the right of the effect list. There you can, for example, define colors and effect directions, and other parameters specific to the individual effects.

(4) This button allows you to switch the effect list to single points. The button offers the following three functions.
The function "**All**" shows all transition effects which are to be found in the system. "**Default**" shows the transition effects, which are integrated in the system and "**Optional**" only shows the transition effects which have been installed afterwards.
If you have installed additional transition effects, they are also shown in this list (underneath the three settings listed above). Thus it is possible just to see only one effect type in the list.

(5) Clicking on the "**i**" button, you'll get information about the transition effect activated in the effect list. If it is an additional effect, the window "**product information**" appears, which offers a description of the effect. Is the effect to be found a standard effect, the product information refers to the manual.

(6) You use the "**Add**" button to apply the selected and defined effect between the scenes in the storyboard middle. The effect symbol then appears between the two scenes with a blue (real-time) or a red flag (must be created). The effect duration corresponds to the duration that was last used. This enables you to insert many effects with the same duration between different scenes.
If you select an new transition effect although there already is one between the two scenes, then the new effect replaces the old, without you having to click again on "**Add**".

(7) A click on the "**Remove**" button removes the added effect from the storyboard. If you would like to replace the current effect with another, then you can simply select the new effect and it automatically replaces the current effect in the storyboard. In this case you don't have to click on the "Remove" button.

(8) With this button you can set the duration of the effect.
This button is enabled after you have inserted an effect between two scenes. The duration then shown is 1 second (assuming that neither of the two scenes lasts less than 1 second). Clicking on this button displays a window in which you use a slider to set the time exactly. Also provided are the durations 1/2 sec, 1 sec and 2 sec, which you can click directly, or use the slider to set the

duration to its maximum limit - the length of the shorter of the 2 scenes used.
An effect between two normal scenes shortens the total storyboard length by the running time of the transition effect. An effect between a normal scene (background) and an Insert scene (foreground) does not shorten the length of the storyboard.

Transition effects may not overlap. For example, if a scene is 5 seconds long then the total duration of the two effects connecting this scene with the previous scene and next scene cannot be longer than 5 seconds. For effects where an insert scene is present, the duration of the insert scene is the maximum limit.
Audio is automatically cross-faded. This means that the audio of the previous scene becomes quieter and the audio of the next scene becomes louder. If a scene's audio is too quiet or too loud, then you should correct the volume when dubbing (audio mix).
If an insert scene is involved with the effect, the audio is not changed because Inserts do not affect the original audio of the background scene.

(9) The "**Preview**" button can only be clicked when the inserted effect is an effect that must be created (indicated with red outline). A screen opens in which the last second of the first scene, the effect, and the first second of the following scene are displayed, so that you can view the transition and perhaps make further corrections (concerning color, direction, time, etc.), before you finally create the transition effect.
The duration of the preview is approximately that of the final version. The preview may be a little "jittery" because it does not work at the normal frame rate. This will not occur in the created effect. For complex effects a certain wait time even for preview may be necessary.
A preview does not require any hard-drive space.

(10) After you have added a transition effect and perhaps defined its duration, you can click on the "**Full Size**" button and bring up a further preview menu, if your system supports this function. There you see the middle frame of the transition effect. The video image is superimposed by an operating panel in which you can see the effect options (if available) on the right side.
On the left side you see the button "**Frame**" below the effect name. You can use this button to specify the point in time of the transition effect you want to see.
In this way you can observe the applied effect at any point in time of the scene. The button does not have to be confirmed – you can scroll slowly through this part of the scene and view it at the same time.
The button "**Display**" positioned below offers you the choice between "**Original**" (representation of the new scene you have just chosen) and "**Compare**". The last option divides the screen into two parts. Your new scene is displayed in the right half of the screen. In the left half of the screen a scene is displayed that you can freely choose from the scene bin with the button "**Choose scene**" positioned below. This comparison function lets you, for example, adjust the color to correspond to an existing scene.
You can also change the effect options to directly compare different colors or directions.
Here you'll also get a real-time preview, too. Therefore the selection of the sliders does not have to be confirmed.
The settings made in this menu are confirmed with "**OK**" and you are returned to the Edit menu. With "**Cancel**" you leave the "**Full Size**" menu without saving any changes.
The arrow button serves to move the menu bar to the upper screen edge.

(11) If the inserted effect shows a symbol outlined in red, then it must be created. When you click on the "**Create**" button a screen appears in which the course of the effect can be seen as it is created. After the creation is completed the symbol's outline is blue.

(12) If your system supports the function "**scene**" you can make use of the multi-layer technique. If you want to overlap several transition effects, you at first add one effect between two scenes and create it. Then you create a single scene from the two scenes and the inserted effect. To do this you click on the "**Scene**" button so that a window appears in which you can select the range for the new scene. The name of the used transition effect appears next to "**Name**" and is given as default name for the new scene. If desired, you can enter another name by clicking and using the keyboard that appears.

You also see the three options "**Effect**", "**Effect +**

scene(s)", and **"Range"**. If you only want to convert the effect with the previously set range into a new scene, then click on **"Effect"**. Furthermore, you can choose if a new scene is added to the **Scene Bin** and/or if it is to **replace** the **Scene + Effect in the Storyboard**. Click onto `**Ok**´ so that the effect is turned into a scene and added as selected above.
You can also let the length of the new scene extend beyond the range of the two previous scenes (with inserted effect). In this case click onto **"Effect + scene(s)"** and then (once you have selected where it is to be added) onto **"OK"**.
Alternatively, you can create the scene from the entire length of or from a portion of the storyboard. Click onto **"Range"**, select how it is to be added and then confirm with **"OK"**. Use the IN and OUT points (in the now familiar Range menu) to select the range of the new scene. The wave form can help you to do this (**section 3.3**). The wave form can be displayed/hidden with the loudspeaker symbol.
Then click on **"OK"** in the Range menu and the scene is created and stored in the Edit menu.
Of course, you can also create a separate scene from a portion of the storyboard in which there is no effect. Simply select a point in the storyboard and click on **"Scene"**. In the window that is displayed only the function **"Range"** is enabled. Specify a range and click on **"OK"**. Then you can view the new scene in the Edit menu.

(13) Here, you can see two buttons that have an effect on sound effects.
Once you have added a Transition Effect between two scenes, you can click onto the Note symbol to add a sound effect. A window opens up (the "Audio Pool"), containing a pre-selection of various effects on the left side.

On the right, you can see a graphical representation of the effect. The button `**Product**´ shows you the available products that contain sound effects. The button `**Type**´ shows you that the sounds are split into three groups: You can choose between the groups: `**Sounds for Fades**´, `**Realistic Sounds**´ and `**Synthetic Sounds**`.
The button **"Play"** is used to play the selected sound. The maximum playback time is five seconds, just like the graphical display.
The button below, called `**Channels**´ allows you to swap the left and right channels around by setting the direction symbol as desired. This may be useful if for example, you wish to change the direction of the wipe effect (e.g. the train the video scene travels from left to right across the screen).
Press `**Ok**´ after selecting to close the audio pool again.
You will then see a little sound effect symbol just underneath the Transition Effect symbol in the Storyboard.
If you wish to play the effect in this screen before it has been rendered, only the sound itself will play. Once the effect has been rendered, all sounds at this position will be played back.
When you enter the "**Audio Mix**" menu, you will see the sound effect in the first effect track of the Audio Mix menu. If this track was already occupied, maybe partially, the sound will be moved to another track. In this menu, you can additionally edit the sound (move, trim, change volume).
Please note that the sound effects are locked to the Transition Effects. If you remove the Transition Effect, this will also delete the sound effect.

Select the crossed out Note symbol found in the Transition Effect menu and the sound effect shall be split and removed from the Transition Effect.

(14) Clicking on the menu symbols brings you directly to the Edit, Image Processing effects, Titling, and to the Main menu screens.

Keep in mind: If you change a setting for an effect that has already been created, change the duration, or even replace the effect with another, the effect must then be created again. Be careful!

The transition effects in detail

The following transition effects belong to the basic package on the CD/DVD or SmartMedia card.

1. 3D Mosaic: The first scene is divided into small squares, the number of which you can set in the effect options under "Number of Squares" (between 1 and 15). The squares "fly" out of the picture and reveal the second scene.

2. 3D Stripes: The second scene is pushed into the picture in the "Direction" you choose (from top to bottom, or from bottom to top) with from 2 to 30 stripes ("Number of stripes").

3. Bars: The new picture either pushes ("Type" "Push") the old with from 2 to 200 "Bars" out of view or superimposes itself ("Type" "Inset"). Under "Direction" you have a choice of six. Two are interlocked (come from two sides). Recommended duration: 0.5 to 2 seconds.

4. Blue box: With this effect you can remove undesirable elements from a foreground scene and place the remaining motif on another background. (This is also commonly called a "chroma-key" effect) You are probably familiar with this effect, it is used by weather forecasters on television. The speaker actually stands in front of a blue wall and is projected onto the weather map.
The background scene can be any motif. The foreground scene, located in the storyboard directly after the background scene, should show an object (thing or person) in front of a single-colored (blue is very suitable) background. You can choose any color, but avoid using pale colors, black, or white.
With "Color Choice" you can set the largest possible box that defines the color range of the foreground scene to be masked.
In case the (blue) surface of the foreground scene (because of illumination) is not completely single-colored, then you can use "Color span" to set the range in percent that the color may deviate from the selected box ("Color choice").
If you click "Include area", the foreground scene appears, but with the help of a box you select here the portion of the background scene to be used for this effect. If you want to see your object in front of the entire background, set the box to be as large as possible.
The "Exclude Area" button specifies the portion of the background that should remain in a single color. If you don't want to use this portion in your video material, then make the box smaller and move it out of the picture.
Keep in mind before calculating to adjust the running time of the effect to the duration of both scenes by using the button "x s". Ideally, both scenes will be the same length.

5. Circle wipe: This effect changes from one scene to another with a circle containing a scene and which becomes steadily larger or smaller. The direction can be chosen with "Mode". "In" means that the second scene overlays the first scene with a circle that begins in the center of the screen and grows outward until only the second scene is visible.
With "Out" the first scene is in a circle covering the screen but which then becomes steadily smaller until it disappears, having been replaced by the second scene. The well-known end to cartoon films can be replicated by using the "Black" effect from the "New scene" list and the mode "Out".

6. Color fade: With this effect the first scene fades into a specifiable color and from there fades into the second scene. Such a fade is popular, for example, with edited interviews, where a hard cut or other transition emphasizes the participant's movement. The usual color box is used here to set the "Color". For this effect black or white is the usual choice.

7. Crossfade: This effect is the classical fade. Next to the hard cut, this is certainly the most frequently used type of scene transition. The first scene is transformed gradually into the second, whereby with increasing time the first scene becomes less and less visible and the second more and more. As with all transition effects both scenes remain in movement. Simply freezing a scene is not attractive and is no longer supported by SMART EDIT.

8. Double exposure: This effect is the classical double exposure as it has been used in film for the last hundred years, and leads to a very atmospheric picture transition. In essence, it is an extended fade. With "Mode" you can choose between "Crossfade" (normal usage) and "Fade In/Out" (recommended for inserts). The "Fade time" (sum of fade-in and fade-out) can be set

for up to 12 seconds. Under "Mix" you can set the proportion of the scenes involved up to 100%. If the control for the mix proportion is set to 0%, then the first scene is shown in full. For 100% you see only the second scene. With 50% both scenes are shown with the same intensity. This is suitable for normal transitions. Don't forget to specify the duration of the effect with the corresponding buttons. You will usually use the "x s" button to set the duration to the maximum so that the transition takes effect throughout the entire double scene. For this case you should trim both scenes to the same length beforehand.

9. Field changer: The scenes in this effect are alternated in half images with each other so that a strobing effect ensues keeping both scenes in movement.

10. Gate: With this effect you can call up the color box with the button "Color" in order to specify which color the gate should have. The gate closes from opposite sides of the screen over the first scene. Under "Direction" you specify whether the opposite sides are top and bottom, or left and right. After the bars have met at screen center, they reverse direction, moving out of the picture and revealing the second scene.

11. Pattern fade: This effect fades the second scene by using the pattern you have selected from the Image Pool. You can choose between “Wipe” and “Split Screen” to achive the ffect you want. In addition, select the color for the border: “None“(no border), “Soft” or “Color”.

12. Picture in picture: This is not really a true transition effect. But SMART EDIT handles it as an effect because it affects two scenes simultaneously. The first of the two scenes fills the entire screen in the background. The second scene is inset on it as a reduced image. The position of the small image can be set in the effect options with the button "Location". The buttons "Shadow" and "Frame" are used to set a value from 0-50. The frame color can be set with the color box through the button "Frame Color". Avoid using very strong colors, because this can lead to jaggedness in the upper-right and lower-right corners. For the picture-in-picture effect audio is not crossfaded, as is the case with all other effects, but instead only the audio of the first scene (background video) is used. You can change this default setting by using audio mixing.

13. Random lines: This effect transforms the first scene to the second by continuously covering the first scene with randomly positioned lines from the second scene.

14. Rectangle wipe: This effect changes from one scene to another with a rectangle containing a scene and which becomes steadily larger or smaller. Under "Position" you can set the "Location" and "Size" of a rectangle where the sides increase or decrease in proportion to each other. The direction can be chosen with "Mode". "In" means that the second scene overlays the first scene with a rectangle that begins in the center of the screen and grows outward until only the second scene is visible. With "Out" the first scene is in a rectangle covering the screen but which then becomes steadily smaller until it disappears, having been replaced by the second scene.

15. Scale: Under "Position" you can set the "Location" and "Size" of a rectangle where the sides always increase or decrease in proportion to each other. If you choose the option "Grow" under "Type", the second scene is zoomed into the first scene. The scene is scaled to fit proportionately into the rectangle and increases or decreases in size according to the sides of the rectangle. If you choose the option "Shrink" the opposite occurs. The first scene is in the rectangle covering the screen and gradually becomes smaller until it disappears, having been replaced by the second scene.

16. Stripe fade: This effect changes from one scene to another by dividing the first scene into stripes which are then faded out while the second scene can already be seen in the background. You can specify the number of "Stripes" from 2-32. Under "Mode" you can specify the direction of the stripes (you have the choice between "Horizontal" and "Vertical").

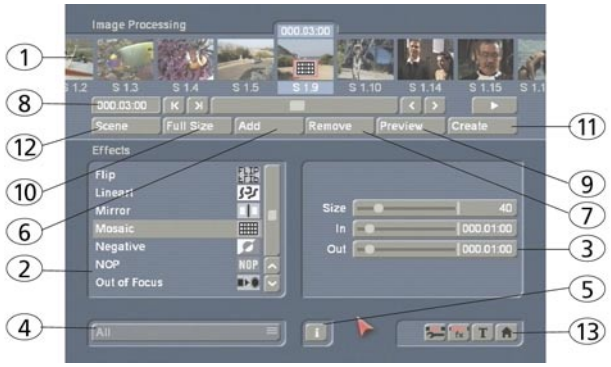
17. ZI Page turn: This effect lets the first scene fold over like a book page, revealing the second scene. You can specify the "Direction", the direction of the "Fixed corners", and the "Quality".

Note: Since this manual was printed, the software version may have been changed. The standard effects in your system may vary from the ones listed here.

5.8 Image Processing effects

Apart from transition effects there are also the Image Processing effects.
In contrast to transition effects, Image Processing effects are applied to entire scenes or segments of the storyboard. You can make a part of your video brighter or invert it, or convert it into a charcoal drawing or relief. These are sometimes referred to as "filters" in old analog editing systems. In the same way, for example, as a yellow filter on a camera lens modifies the color of pictures taken, an Image Processing effect is applied to a particular segment of the storyboard.

In the Image Processing effects screen only one scene is selected. The selected scene represents the approximate range for the intended effect. You can process just one image, or an entire scene, or in the extreme case the entire storyboard.



(1) The long-term effects menu displays the familiar storyboard. You now bring the scene (to which you would like to add effect) into the center of the storyboard.
A difference to the storyboard from the "**Edit**" menu is the Play button. In the Image Processing effects screen the Play button does not play the entire storyboard, only the selected scene in the center. If an effect has been added, then the length of the entire effect is played.

(2) You can select an effect in the **effect list**. Either click on the effect directly so that it is highlighted by the dark-gray bar, or use the slider or arrow buttons in order to move the desired effect to the correct position. If you do use the slider, then after selecting the effect you must press the left trackball button so that the light-blue bar again changes to dark-blue.
Note: In going to print, not all effects were HDV capable and could therefore not be made available in HDV projects.

(3) After you have chosen an effect that is available with further options, the corresponding **effect options** are displayed in the field to the right next to the effect list. There you can define, for example, the colors and intensity of the effect.

(4) This button allows you to switch the effect list to single points. The button offers the following three functions.
The function "**All**" shows all image processing effects, which are to be found in the system. "**Default**" shows the image processing effects, which are integrated in the system, and "**Optional**" only shows the image processing effects, which have been installed afterwards.
If you have installed additional image processing effects, they are also shown in this list (underneath the three settings listed above). Thus it is possible just to see only one image processing effect type in the list.

(5) Clicking on the "**i**" button, you'll get information about the image processing effect activated in the effect list. If it is an additional effect, the window "**product information**" opens, which offers a description of the effect. Is the effect to be found a standard effect, the product information refers to the manual.

(6) With the "**Add**" button you can apply the selected and configured effect to the scene located in the center. The effect symbol appears in the scene outlined in red. If you select a new long-term effect even though there is already one in the scene, the new effect replaces the old, without you having to click again on "**Add**". The length of the newly inserted effect corresponds at first to the length of the actual scene, but can be changed with the button located to the above-left (item**(8)**).

(7) A click on the "**Remove**" button removes the inserted effect from the storyboard. If you want to replace the current effect with another, simply select the new effect and it will replace the one in the storyboard. In this case you don't have to click on the "**Remove**" button.

(8) After you have inserted a scene the scene length is displayed in this button (and thus the maximum length of the effect). Click this button

so that the "**Specify Range**" menu opens and you are given four selection options. You can let the effect run "**1 sec at beginning**", "**1 sec at end**", over the "**complete scene**", or over a specifiable "**Range**".
Choosing the function "**Range**" opens a Trim menu, similar to "**Trim**" from the "**Edit**" menu, in which you can set the applicable range for the effect. The effect will begin at the In point (first frame of the scene), and end at the Out point (the last frame). Some segments of the storyboard cannot be selected. The reason is that other effects are already defined. Overlapping between long-term effects and titling is not possible. (However, you can do this by using the Special function in the Edit screen to create new scenes with included IP effects.)
You can also choose between the "**Trim**" and "**Position**" functions here as well. For further information, please refer to the notes regarding "**Insert**" (Chapter 5.5, Point **(12)**)
When you have set the range of your choice, return to the "**Image Processing**" screen (click on the right button).
If you have extended the effect to other scenes, then you will also see the effect symbol in these scenes. (By choosing the option "**complete scene**" you can remove the selected effect from the other scenes.) The range that you just set is displayed in this button.

(9) Clicking on the "**Preview**" button opens a small screen in which the video plus the effect runs. In this way you can judge and perhaps make corrections (for color, intensity, time, etc.) to the effect before creating it.
The running time of the preview will correspond approximately to the time of the calculated effect. The preview may be a little "jittery", because it does not run at the normal frame rate. This will not occur in the created effect. A preview requires no space on the hard-drive.

(10) After you have inserted an Image Processing effect and perhaps specified its range, you can click on "**Full Size**" (if your system is provided with this function) to bring up an additional menu. In the background you see the middle frame of the entire segment for the inserted Image Processing effect (if the effect is applied on the entire scene, then you will see the middle frame of the video scene).
An operating panel with effect options (to the right, if there are any for the selected effect), overlays the video.
To the left you see the button "**Display**" with four available possibilities. With "**Original**" you can view your original scene. With "**Effect**" you can observe your scene with the applied effect. "**Orig. + Effect**" displays the original scene in the left screen half and the applied effect in the right half. In this way you can easily compare the original with the applied effect.
The option "**Compare**" divides the screen into two parts. To the right you see your new scene (with effect) and to the left a scene that you can freely choose from the scene bin using the button "**Choose scene**" positioned below. This lets you, for example, exactly adjust the color to correspond to another scene.
Above the function "**Display**" you see the "**Frame**" slider with which you can set the point in time of the long-term effect that you want to view.
In this way you can view the inserted effect at any point in time of the scene. The button does not have to be confirmed, so that you can scroll slowly through the scene and view the effect at the same time.
Of course, you can change the effect options as you wish and thus have the possibility of directly comparing various colors and directions.
The effect options can be set directly in this window, while watching a real-time preview.
The selection of the sliders does not have to be confirmed.
The effect options set in this menu are accepted with "**OK**" and you are returned to the Edit menu. With "**Cancel**" you exit the "**Full Size**" menu without changes.
The arrow button serves to move the Single-image menu to the upper screen edge.

(11) When you click on the "**Create**" button a window appears in which the effect can be viewed as it is created. After completed calculation the outline of the effect symbol is blue.
When you calculate an effect SMART EDIT reads all individual images from the scene in question and applies the effect to it. The result is stored on the hard drive. This procedure takes time and consumes hard-drive capacity.
When recording data you should always leave a small amount of hard drive capacity in reserve. Depending on how often effects are used, this should be between 2% and 10% of the video playing time.
Although it is theoretically possible to apply

an effect to the entire video material, it is usually not meaningful to apply a general color or brightness correction to all the footage. This would require extensive hard-drive capacity and would take a long time to be calculated. It is better to make such corrections when recording from the video input device using the sliders in the "**Video settings**" screen.

(12) If the "**Scene**" button is available on your system, you cam make use of the Multi-layer technique.
If you would like to overlay several long-term effects, you at first insert an effect into a scene and create it. Then you convert the scene with the inserted effect into a separate scene. To do this click on the button "**Scene**". A window appears in which you can select the range for the new scene. The name of the effect applied appears under "**Name**" as default name for the new scene. You can change this name by clicking on it and calling up the keyboard.
You also have the three options "**Effect**", "**Effect + Scene(s)**", and "**Range**". In order to make a new scene just from the effect with the previously set range, click on "**Effect**". Furthermore, you can choose if a new scene is added to the **Scene Bin** and/or if it is to **replace** the **Scene + Effect in the Storyboard**. Click onto `**Ok**´ so that the effect is turned into a scene and added as selected above.
You can also adjust the length of the new scene to the range of the previous scene (with inserted effect). In this case click on "**Effect + Scene(s)**" and then - once you have selected where it is added - on "**OK**". The new scene is created and appears in the scene bin.
Alternatively, you can create the new scene from the entire length or a segment of the storyboard. Click on "**Range**", select how it is added and then confirm with "**OK**", and use the IN and OUT points in the familiar Range menu to select the range containing the new scene. The wave form can be of help **(section 3.2)** and can be toggled on/off with the loudspeaker symbol.
Then click in the Range menu on "**OK**" and the scene is created and put into the Edit menu in the Scene Bin.
Of course, you can create a separate scene from a storyboard segment in which there is no effect. Simply select a scene in the storyboard and click on "**Scene**". In the window displayed only the function "**Range**" is active. Specify a new range and click on "**OK**". Now you can view the new scene in the Edit menu.

The multi-layering technique for Image Processing effects can also be applied by using the Edit menu to activate a scene in the scene bin and then clicking the "**Special**" button. All Image Processing effects are listed there. The effect you select is not applied into the storyboard. Instead a copy is made of the active scene in the scene bin with the Image Processing effect added to it. The copy is then identified with the extension "**SP", "SP 2**", etc., as the case may be. You can carry out this procedure any number of times. (See section 5.5 Editing, item **(19)**)

(13) Clicking on the menu symbols brings you directly to the **Edit, Transition effects, Titling, and to the Main menu screens.**
Keep in mind: If you change a setting for an effect that has already been calculated, or change the duration, or even replace the effect with another, the effect must then be re-created. Be careful!

The Image Processing effects in detail

The following Image Processing effects are available in the standard package:

1. Binarizer: The scene is divided into two colors according to brightness. With "Color 0" you bring up the color box in which you select a color that replaces the darker areas. "Color 1" replaces the brighter areas. The "Threshold" of the transition from light to dark can be set from 0-100%. And you can set "Transition" between the two colors from 0-100% in order to prevent "edge shimmer".

2. Color depth: A very frequently seen effect can be achieved with this. The number of colors in the picture is reduced. The "Depth" can be set from 2-50. The "Transition" can be set from 0-100% in order to prevent "edge shimmer".
Tip: Up to 16 million different shades of color can appear in a video image. This allows fluid transitions. For each color component (there are a total of three color components) there are about 256 possible levels.

3. Color to Grey: Usually the video material is in color. This effect can convert the video to black-

and-white. If you want to convert long segments, or perhaps even the entire video to black-and-white, then you can set the color saturation in the Video settings menu to 0% when initially recording the material. This might save you long calculation times.

4. Control Color: With this effect you can correct the colors "Red", "Green", and "Blue" in the scene (later adjustment). You can set the color from 0-200%, where 100% corresponds to the regular color.

5. Control Image: With this effect you can change "Brightness", "Contrast", "Saturation", and "Gamma".

6. CVBS filter: This effect can be used to reduce edge shimmer which sometimes arises when using an CVBS (RCA) connection. This shimmer can appear at very fine, high-contrast edges arises to a much lesser extent or not at all when using a S-Video connection. Using the filter causes a weak blurring of the image. The filter should therefore only be used when absolutely necessary.
You can set the "Strength" from 1-3.
Tip: With a CVBS connection the signals for brightness and color, which are normally separate, are mixed. This causes considerable loss in the video bandwidth, especially for color. The "CVBS filter" reduces the video bandwidth and thus reduces the extent of the undesired effect described above.

7. Doubler: This effect blurs the scene by overlaying the image with itself so that a light colored shadow appears.

8. Dynamic range: This effect is used to limit the extent of brightness and contrast. This makes possible interesting estrangement effects. Experiment a little with the settings! The preview offers a good approximation so that you don't have to make time-intensive calculations. All image information is retained under "Type". "Clip". The controls "Min" and "Max" are used to change brightness and contrast. Under "Compress", however, image information is lost for areas brighter than maximum or darker than minimum, which are set to maximum or minimum, respectively. You lose the details in the bright and dark areas. Other areas are unaffected.

9. Fade in: This effect helps you to fade in the scene, e.g. at the beginning of your film. Choose the desired color with the effect options and see how the color becomes less and less dominant until the scene is completely revealed and the color no longer visible. This effect fades in only the picture material, not the audio!

10. Fade out: This effect helps you to fade out the scene, e.g. at the end of your film. Use the "Color" option to select the desired color to which the scene is faded. At first, the effect overlays your scene very lightly with the color so that the scene is still clearly visible. In the course of the effect the color becomes more and more dominant until the scene is completely overlaid and no longer visible. This effect fades out only the picture material, not the audio!

11. Flip: This effect flips the scene. If you set the "Direction" to "Horizontal", then you see the scene with the left and right halves exchanged. If you set "Vertical", then the scene is seen upside-down. The setting "Horizontal + Vertical" combines these two effects.

12. Movie mode: This effect is used to turn 50i format scenes (interlace) into progressive 25p format footage. In this fashion, movement is made to simulate the typical cinematic look from the movies. The effect creates 25 different frames rather than 50 fields.

13. LineArt: With this effect the video is turned into a sort of moving charcoal drawing. All edges and sharp contours look like they have been redrawn with a charcoal pencil on a piece of white paper. The "Contrast" control is used to set the blackness of the lines from 1-8 depending on the contrast of the original scene.

14. Mirror: A scene is mirrored. Under "Type" the following directions can be given: "Horizontal Left-Left", "Horizontal Right-Right", "Vertical Top-Top", and "Vertical Bottom-Bottom". You also have the possibility to mirror the two upper or the two lower image halves, whereby you can also specify which image half (left or right) should be mirrored.

15. Mosaic: With this effect you make a mosaic out of your scene. The scene is divided up into individual squares that become larger. You specify the "Size" of the squares from 2-200. You

specify the beginning and end points for the effect within the scene with the "In" and "Out" points. Time can be up to 10 seconds.

16. Negative: This is the negative effect known from photography. It is often used for special effects, but also has a practical application. With the macro function of some video cameras it is possible to film a slide or a negative in full-screen format. The Negative effect can then be used to create a positive image for use in the video.
For this effect you also have (under "Type") the choice between "Brightness" and "Brightness + Color". There is an interesting effect for example, if you invert the "Brightness". The video seems like a negative, but the colors are correct.

17. NOP: You can ignore this effect. It is listed in the regular effect list but doesn't do anything. This function causes no change to your video material but is used by MacroSystem technicians to help find software and hardware errors so that we can help you with problems by telephone. NOP is an abbreviation for "No OPeration".

18. Out of focus: With this effect you can make a scene appear blurred. You can set the blur "Intensity" from 2-20. Under "In" and "Out" you set the start and end points of the effect (up to 12 seconds).

19. Panorama Zoom: This effect converts footage to a different format. For example: 4:3 video footage is converted to work on a 16:9 monitor and vice versa. A special, non-linear scaling method usually helps to avoid the black bars on the screen edges.
The option `**Conversion**´ is for selecting the format of your source footage that does not match the project.
Depending on the project format (the setting you made in the Project Settings in Format 16:9 or 4:3), you can now choose the corresponding setting.
The slider for `**Distribution**´ determines the strength of the scaling (values range from -20% to +20%).

20. Rectangle: A rectangle is inserted into your video. You can set the "Position/Size" and the "Color".

21. Relief: The video image is transformed into a sort of 3-dimensional relief. It looks as if it has been chiseled in stone – a single gray tone with light and shadow at the edges. Edges appear where the original has strongly contrasting edges. The button "Direction" can be used to change the illumination source in order to obtain different effects. The arrow shows the direction in which the light shines from.

22. Sharpen: Sometimes you may want to improve a blurred segment of a scene (e.g. old archive material). The degree of sharpness can be set from 1-8 with the "Strength" control. The preview does not do full justice to the result, so you should experiment beforehand with a shortened version (Edit/Copy, Trim) of the scene you would like to correct.

23. Solarize: The video is strongly altered with this effect. The original colors are ignored and new colors are created that are dependent on the brightness. Black is replaced by blue, gray values are converted to orange, yellow, green, cyan, and even blue where the very brightest image areas were. You can sometimes see similar images in TV science programs or in crime movies as so-called "heat images". Hard transitions may lead to shimmering edges, especially for VHS or when using the CVBS connection. The effect "CVBS filter" can be used to alleviate this (before or after.)
You can set the "Saturation" from 0-100%. The higher the percent number, the more color the image has. For 0% you have a black-and-white picture.
Tip: False colors are frequently used in science to highlight small differences in brightness for the human eye. The human eye can distinguish only about 100 different levels of brightness, but about 100,000 different colors.

24. Spread: Here you create a "shimmering" image. This is achieved by distributing the pixels within a circle (which you set with "Step" 1-10) containing the original pixel.

25. White balance: In case recording has led to erroneous white matching resulting in white and gray surfaces that look wrong but the color is OK, you can specify the location and size of a rectangle with the button "Reference Color". Then the color fault within the rectangle is averaged and the deviations in the entire image are canceled out. Note that only light color faults

can be improved. You can turn a red surface into a gray one, but the effects on the rest of the image are extreme (color distortion).
In the case that there is no colorless surface in the image, then a color correction can only be done with the effect "Control Color".

26. Zoom: A defined image area can be zoomed in. Under "Position" you give the location and size of the rectangle area. Under "Zoom In" and "Zoom Out" you specify the start and end time of the effect (up to 12 seconds).

5.9 Titling

Titling functions much the same as if it were an Image Processing effect. Titling is actually done as a picture-editing effect. Instead of a "filter", digital text is added to your video.

Titling has two menus:
The settings in the "**Titling**" menu correspond closely to those of the image processing effects menu. You can read the corresponding description there for information about functions such as **Insert, Delete, Range, Preview, Single image, Calculate, and Scene**.
After you have selected a desired title effect, and perhaps set further **Options** in the field to the right of the **effect list**, you must first Add the effect into the storyboard. You can then enter the **Titler menu** by clicking on the button "**Enter/edit Text**" below the effect options.

(1) In the background you see the first frame of your video scene.
This full frame display serves as orientation for adding text. This lets you immediately see how the text looks overlaid on the particular scene you are editing.
At the vertical or horizontal edge of the window you may see - according to effect - a scroll bar, with which you can scroll through the text box.
If text boxes are already present in the video image, then you can use this menu to enter text with the help of an external keyboard.

(2) If you click on the button "**Text**", you will continue to see the first image of your scene. There is a task bar in the foreground. This task bar provides you with several components that are described in the following:

• With the **keyboard** you can enter the text of your choice. It is also possible to connect an external keyboard (e.g. PowerKey option) to enter the text. Any adjustments you make to the settings will automatically be applied to the next line of text entry.
If you want, you can enter the text later, but it is recommended that you enter some letters now in order to better judge the results later.
If you would like to format every line with its own settings (e.g. font, size, color), then click on the newline key after every line you enter and then specify the desired format. Separate formatting for individual words or letters in the same line is not possible.
• A click on the button "**Font**" opens a window in which you have a choice of fonts and many type sizes (10-500 points). The font can be selected by clicking on its name or with the slider, as you already know from the effect list.
In the list you may also see various symbols next to the fonts. Most of the supplied fonts are marked with an "**A**" (this font contains all the usual Western European characters).
A font marked with a happy face (there is one supplied in the standard package) contains pictures and/or symbols instead of letters and punctuation. Fonts marked with an "**A+**" also contain Eastern European characters. These fonts can be purchased separately.
Fonts marked with an "**A-**" are not always complete or deviate from the norm. These fonts are not sold, but can be obtained free of charge in

appropriate instances.
Note: The Carolann font supplied with the standard package has two different forms for "s", in addition to "ß". The "s" key on the keyboard is the more frequently used long "s", that is something like an "f" without the horizontal stroke. The small, round "s" is mapped to the "#" key. Font size is specified with the slider. The font and size are displayed with the text "MacroSystem".

• A click onto the "**Style**" button opens another screen. Here, you can see a preview to the right displaying a smaller version of your video. The text part and background are related to the position of the text cursor. If you have not yet entered text, the system displays some other letters.

In the top left corner, decide which pattern is to be used for the text. Press "**Color**" for the color box or "**Pattern**" to open the "**Select pattern**" screen.
In this screen you can select a pattern of your choice, just as described in section 3.2 under **"Image pool"**. The mode (positive/negative) and alpha value can also be specified.
Clicking on **"OK"** in **"Select pattern"** confirms your settings and you are returned to the **"Style"** menu.
Now you can see the "**Outline**" button. With the aid of the slider next to it, define the strength of the outline with values between 0 (not active) and 6 (strong). The "**Color/Pattern**" button leads you to the image pool, in which you can decide if the outline is to consist of a pattern or color.

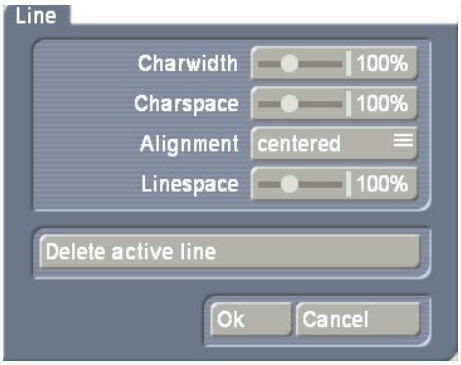
In the box beneath, you should see the "**Shadow**" button. Use it to determine a width between even values of 0 to 20.
The "**Direction**" and "**Color**" of the shadow can now also be determined.

In the right area of the screen, you can see the function "**Italic**". You can activate it by selecting the empty box next to it.

Underneath, you can see the "**3D**" option. The strength of the three-dimensional effect can be set with even values between 0 and 20 by moving the slider. The effect makes the letter look as if they had a certain depth. If you use higher values, make sure to set a character space of around 120% so that the 3D effect does not interfere with the letters themselves.
The "**direction**" can be set to four different possibilities. The arrow pointing towards the left top direction is recommended.
The structure of the effect can be set using the "**Color/Pattern**" button. It is recommended to use a tone similar to the text color, yet with brightness between this and the background color's.

Below left, in the **"Style"** screen, you can see the "**Archives**" button. The Archives allow you to save the styles you have created. You will also find some examples of styles in the archives.
The Style screen can be closed by pressing the "**OK**" button (meaning that you confirm the settings made) or by pressing "**Cancel**".

• Clicking in the text entry operation panel on the **"Line"** button opens a window in which the functions **"Character width"**, **"Character space"**, **"Alignment"**, **"Line space"** and **"Delete active line"** are listed.
You can see that the settings of the buttons with percent values lie between 50% and 200%, whereby 100% corresponds to the default setting.



In the Enter/edit text screen, click anywhere

in the line of text to be edited. Then select the button "**Line**" and under "**Character width**" enter the desired percent. Click on "**OK**" to observe the result. The letters have become wider (> 100%) or narrower (< 100%), depending on the percent given, and the entire line has become either longer or shorter.
The individual words in a line cannot be formatted separately. The settings apply only to the entire line.
The function "**Character space**" increases or decreases the space between the letters. In the Enter/edit text screen, click anywhere in the line of text to be edited and select the button "**Line**". Use the "**Character space**" slider to enter the desired percent of the distance.
The line is stretched (> 100%) or narrowed (< 100%), depending on the percent value given.
The individual words in a line cannot be formatted separately. The settings apply only to the entire line.
Under the selection button "**Alignment**" you can specify whether the line should be formatted "**left**", "**centered**" or "**right**".

With the function "**Line space**" you can specify the distance between the selected line and the line below it. In the Enter/edit text screen, click on the line that lies above the line to be changed. Now select "**Line**" and under "**Line space**" change the default value (=100%) to another value.
If your percent number is smaller, then the line below moves closer to the selected line. If your percent number is larger, then the line slides farther away toward the bottom from the selected line. The lines below the moved line are moved along with it, but keep their respective distances.

You can also make several settings together in the "**Line**" window before clicking on "**OK**". Note that the settings always apply to the line selected beforehand!

The percent values you have set are retained. You can view the settings and changes for the line you have selected by activating the "**Line**" window. Here you can also modify the percent values.
(If you have made changes but still see the default values of 100% in the "**Line**" screen, then you have selected the wrong line before clicking on "**Line**".)

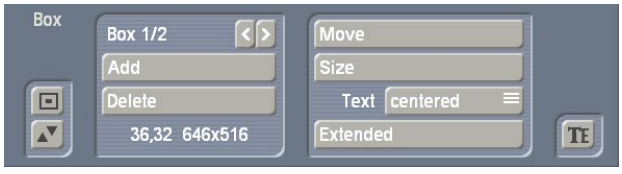
Clicking on "**Delete active line**" causes the line containing the position marker to be deleted. The window disappears.

• The switch Import (CD symbol with an arrow)

allows you to import texts written on a computer for titling (for instance, a text from an email with a customer's preferred credits text). This saves work and prevents typos. The system supports the standard text formats `ASCII` and `UNICODE`.
When saving a text in a word processing package, make sure to save it as such. In order to make sure that even unusual characters are imported correctly (such as the Euro symbol), we recommend that you use the UNICODE format too.
If you wish to import a PC text, note that only the pure text is actually loaded, not the settings such as font type, size, style etc. Such settings (like the text format) must be made in Smart Edit after importing.
Before starting, make sure that you have inserted the correct medium (CD/DVD) or connected the right device (USB stick, Fire wire hard-drive). Click onto the symbol button. Now you can select the source for the text you wish to import. Choose either the CD/DVD, the external Firewire drive or the USB stick (for this, you require the Card Drive software). Following this, the texts on the source medium will be displayed and you can now choose the text for the import.

With the buttons on the left in the menu "**Text**" you can reduce the task bar to these buttons or move it to the opposite screen edge.
With the "**TE**" button you return to the titler menu.

(3) Clicking on the button "**Boxes**" calls up an additional task bar, with which you can create and edit text boxes.



• To the above left you at first see the label "**Box 1/1**". You see the display "**Box 1/2**" after you

have added a text box. After adding still another text box "**Box 1/3**" is displayed, and so on. With the help of the right arrow key you can move forward through the boxes. The left arrow key is used to display the previous box.

Note: You can toggle between the text boxes by clicking directly on the corresponding spot in the preview screen. The box is then marked with a broken line.

• Use the button "**Add**" to put an additional text box onto the video image. When you click the button a dashed box appears in the upper left corner of the video image. You now use the trackball to position the box. After the upper left corner of the box has reached the desired position, confirm by clicking the left trackball button. Rolling the trackball now determines the size of the box. Clicking on the left trackball button again confirms the setting.
You can define any number of text boxes. The last text box to be added is indicated with a dashed frame.

When a text panel is hidden by others you can make it visible either by resizing or moving the overlying panel, or by clicking repeatedly the TAB key on the keyboard (to the left of the letter q) until the text panel you want appears.

Note: Please note that after calculation the text boxes are ordered in the same sequence as they were created. The sequence that you used to place the boxes on top of each other is irrelevant for the calculation!

• Clicking on "**Delete**" causes the active (outlined) panel to be deleted. The previously inserted panel now becomes the active panel.

• Both the coordinates and the size of the currently active text box are displayed at the lower left edge of the task bar.

• With "**Move**" you can change the position of the active text box. You drag it with the trackball and confirm the new position with the left trackball button. Alternatively, you can position the trackball cursor on the upper left corner of the text box so that a symbol (four spearheads) appears. Then click on the left trackball key so that the task bar is hidden and you can move the selected text box. After you have reached the desired position, click again on the left trackball key.

• After clicking "**Size**" you use the trackball to resize the panel at the upper and right edges and fix the new size by clicking on the left trackball button. Alternatively, you can change the box size by clicking directly. Point the screen cursor to the upper or lower edge so that an arrow symbol appears, click on the left trackball key and drag the edge up or down by rolling the trackball. Moving the left or right edge functions in the same way.
If you point the cursor to the lower right edge, a diagonal arrow symbol appears. Click on the left trackball key and then roll the trackball to change box height and width simultaneously.

• Clicking on the button "**Extended**" calls up a display in which you have several options:

- The function "**Copy style to all lines**" offers the possibility to copy the settings made in the window "**Style**" from one single line to all other lines on this page. Before you call up the window "**Extended**" again, mark the line (place the cursor in this line) which contains the style you want to copy. After selecting "**Style for all lines**", the settings will be copied.

Similarly to the function mentioned above, you can copy the font of one line to the other lines by clicking on "**Copy font to all lines**". Mark the line which contains the desired font and choose the function "**Copy font to all lines**".

Selecting the "**min. Size**" button reduces the text panel to a minimum, meaning that a narrow

border encloses the text inside.

Clicking onto “**Visible Size**” sets the text panel to a size visible on a television set.

If you click on the button "**max. size**" the active box enlarges beyond the screen edge. This function is helpful, for example, if you would like to fill the box background with a transparent color or pattern.

Clicking on the button "**Settings**" causes a display to appear in which you can set "**Grid**" and "**Border**".
The "**Grid**" slider allows you to set the size of the invisible grid. The box edges are aligned with this grid so that positioning is easier.
With the "**Border**" slider you set the distance of the text box to the screen edge.
It is also possible to move the text box using the cursor keys of an external keyboard.

(4) After clicking on the button “**Pages**” a new task bar appears in which you can create and edit pages.

• There you see at the above left (according to the effect) the label “**Page 1/1**”. After you have added a page (see below) you see the label “**Page 1/2**”. After an additionally added page “**Page 1/3**” appears, etc.
With the help of the right arrow you can move forward through the pages. The left arrow displays the previous page.

• By pressing the “**Insert**” button, you can insert a new text page. Inserting a new page prompts SMART EDIT to question if the page is to be inserted before or after the current (first) page. All pages will automatically be added after the chosen page. A page can only be inserted (added) if it contains text.

• Pressing “**Delete**” deletes the current page and you will see the next available page on the screen. If you have deleted the last available page, the previous page will be seen.

• The selection button “**All lines**” offers three possibilities: “**Top**”, “**Centered**” and “**Bottom**”. With these options, you can select the vertical position of the text lines of all text panels on the current page.

• The button “**Background to all boxes**” copies the background of the current box to all other panels on this page. The button has no effect if you are working with just one box.

(5) Clicking on the button "**Graphics**" causes an additional task bar to appear.

• At first you can decide whether your text box should be provided with a background. Next to the function “**Choose background**” there is a checkbox. If you see a checkmark in the checkbox then the background for the active text box is transparent. If you activate the checkbox so that a checkmark appears, then the active text box is filled with a background.

• In order to specify the box background, click on the button “**Choose background**“. This opens the image pool.
There you can specify the desired pattern or color - also with transparency percentage.

• A click on the button “**Add graphics box**” opens the image pool, in which you can select a graphic (Product: SMART EDIT, Type: Images). After clicking on “**Ok**” you can position the box in the desired size on the screen.

• The selection button “**Mode**” provides you with several possibilities to render the box background and the graphic in the text box.
The option “**free scaled**” means that the pattern/graphic is adjusted to the size of the text box. Under some conditions the proportions may be distorted.
The option “**fix scaled**” uses the original proportions of the pattern/graphic, meaning that adjustment is made in reference to one edge of the box. This may result in black streaks at the edge of the text box. With the option “**Original**” you use the pattern/graphic in original size. This means that for a small text box only a part of the pattern can be seen. A large text box is then not completely filled with the pattern.
The option “**tile**” fills the entire text box with the

selected graphic. If you have selected a normal large pattern, then you will see no difference to the option "**Original**". If the graphic is smaller than the text box, then it it is set in original size tiled behind each other, so that the entire box is filled with one and the same graphic.

(6) The "**Preview**" button can be used to (if you have already added a title effect to the storyboard) see a preview of the effect you have selected. If you have not yet added an effect, the trackball pointer will display a little cross when trying to press "**Preview**".

(7) A click on "**Archive**" opens a field displaying four buttons: "**Load**", "**Save**", "**Delete**", and "**Cancel**".
Clicking on "**Load**" displays a list of the previously saved titles. In this list you select a title, either directly or with the slider, and confirm ("**OK**").
Clicking on "**Save**" displays the same list. Now you have two possibilities:

1. You can click the gray rectangle below the list so that the keyboard is displayed and you can assign a name to the previously created title, followed by clicking on "**OK**" within the keyboard and in the text archive field.
2. You can select a title from the list and then click on the gray line which now contains the name of the selected effect. Within the keyboard field you now overwrite this name with another of your choice. The difference to the first possibility is that you overwrite not only the name, but also the archived title, which is then irrevocably lost. Alternatively, you can select a title without clicking on the yellow line. If you then confirm with "**OK**", the selected title is replaced by the previously created title, but retains its name. With the help of archiving you can save your frequently used standard text independently of projects and reuse them at any time.
If you click on "**Delete**", a list of saved titles is displayed in which you can now select the title to be deleted and confirm with "**OK**".
A click on "**Cancel**" closes the menu without accepting any settings.

(8) A click on the „**i**" button displays information on the selected title effect, the length of the effect (in the case that you have already placed it in the storyboard), and whether you have applied the typefaces installed only in the demo version to your text boxes.

(9) With the "**OK**" button you confirm again all settings made and are returned to the "**Titling**" menu.

(10) With "**Cancel**" you exit the Text-entry menu without accepting any settings made for the "**Titling**" menu.

In the "**Titling**" menu you can then insert the title effect and calculate it, or set the range beforehand, as is done with the "**Image processing**" effects screen.

The title effects in detail

The title effects can be selected in the effect list. This list contains several effect options. For many of them additional attributes can be modified, as will be shown in the following:

1. Fading V-Scroll: The text scrolls from the bottom to the top through the picture. The scroll speed depends on the scene length and the text length (the text scrolls fast enough so that it moves entirely over the screen within the duration of the scene). The title enters the screen in a transparent state, becomes clear (solid) in the center of the screen, and again more and more transparent as it scrolls out of view. You can set the height "Fading height" of this fade-in and fade-out from 10-200 pixels.

2. Horizontal Scroller: The text moves across the screen from right to left at the bottom of the screen. In the Text-entry menu you can enter as many letters as you wish for the text. There is a slider below the video you can use to move the text further.

3. In/out fading pages: All pages are faded in and out in sequence. The "Fade" indicates when the title should be faded in (up to 12 seconds) and the "Pause" indicates the duration between two pages.

4. Moving pages: The direction in which the title is scrolled (over one or more pages) into ("into") or out of ("out of") the page is specified here. Any one of eight directions can be given. In addition, the "Movement" can be set up to 12 seconds.

5. Pages: All document pages are displayed in

sequence. Display is done without fading and pauses. The display time is such so that the entire scene is affected.

6. Through fading pages: All document pages are crossfaded one after another in sequence. The speed can be set from 0-12 seconds in "Fade".

7. V-Scroll: The text scrolls from the bottom to the top through the picture. The scroll speed depends on the scene length and the text length. The text scrolls at a speed so that it scrolls entirely over the screen within the duration of the scene. Several pages can be inserted.

Audio

You should not begin audio mixing until you have finished editing the video. Effects and titling should already be completed. Editing video or adding effects after audio mixing has been completed can damage the careful editing work which you have already done on the sound track.

When you edit video in SMART EDIT you also change the audio. Transition effects in the video are also applied to the audio. This section deals with audio mixing, which involves adding additional audio tracks overlaying or supplementing the original audio.

SmartEdit provides a number of interesting features:

- The volume may be corrected during video recording, i.e. with video recording running.
- Audio effects can be added directly to an audio sample, in a similar way to image processing effects. It is not necessary to create a new audio sample with the desired effect.
- Used in conjunction with suitable surround systems, the surround audio effect creates interesting three-dimensional sound effects.
- An audio wave form enables the volume to be influenced by means of the rubber band function. The volume of each audio sample can be increased or reduced selectively at any desired point.
- Within the extended timeline display, you can toggle between individual audio samples of an audio track and between the audio tracks themselves.
- Practical default times have been added to the fading function.
- Video transition effects are also displayed in the Storyboard display of the Audio-Mix menu in the form of an intermediate scene.
- Audio splitting by the bar. Audio samples can be split at the touch of a button during play.

Audio mixing employs the same principle as video editing:
1. Recording of the raw (audio) data.

2. Splitting of the audio sample into a number of discrete passages (if desired).

3. Trimming of these data, i.e. cutting out of undesired components such as coughing, residual material from adjacent CD tracks, etc.

4. Special processing of the audio sample or of a part of it (e.g. interchanging of stereo tracks).

5. Insertion of these audio samples into the storyboard.

6. Adjustment of the volume of the original audio and of any commentaries and the background music to each other, and adjustment of any fading.

7. Addition of audio effects (if desired).

8. Fine adjustment of the volume of individual audio samples by means of wave form (if desired).

9. Creation (if necessary) of the complete sound track (all stereo tracks are mixed on a single stereo track).

10. This just leaves **recording to tape**, and your video is finished.

5.10 Audio Record, Edit.

Use this menu to record your audio material by clicking on the round red Record button. You can also use this function to split, trim and name recordings.

(1) Use the **volume display** to adjust the volume level. Try to set the recording volume level as high as possible so as to obtain optimum sound quality, but do not over-modulate it. Click on the **scrollbar** below the volume display to change the volume level. Move the scrollbar to the left or right to reduce (to a minimum of -30 dB) or increase (to a maximum of 20 dB) the volume respectively. Flashing blue indicates that everything is in order, flashing yellow indicates a risk of over-modulation during audio mixing (only if several over-modulated segments are mixed), and flashing red indicates over-modulation.

(2) If your system supports the "Sound" button, it can be used if an analogue input has been selected, i.e. **Microphone, Front and Rear**. Before recording audio material, click on the button. A window is opened in which you can select the **Treble and Bass** from -12 to 12 dB.

(3) Here you can see the audio input. The options available differ of course according to your particular model.

(4) Select between **Mono and Stereo** modes. When using a mono **microphone**, check that **Mono** is actually selected. If **DV** is selected as the input, you can also select **Stereo B**. In this case, the sound is recorded from a **second stereo audio track** of the input device, provided the input is in 12-bit, 32 kHz mode. Not all DV input devices offer a facility for selecting this mode, however.

(5) This field displays the **remaining capacity** of the audio partition as a function of the selected quality (the higher the quality, the shorter the running time).

(6) The audio samples which you have recorded are automatically assigned a label (**A 1, A 2**, etc) in the **audio list**, and their length displayed. If you have added an audio sample to one of the sound tracks of the **Audio-Mix menu**, it is marked with a small white point next to the length.

(7) The **New Sample button** opens a dialog in which the **Sound, Silence and Sine Wave Sound** functions can be configured and launched by means of the respective buttons.

The effect `**Sound**´ allows you to transform sound effects from the audio pool (see chapter 5.7, point (13)) and thus use them for the audio mix. Click onto the button `**Select Sound**´ to open the audio pool selection.
Select the desired sound effect, exit both the audio pool and the `**New sample**´ window with `**Ok**´.
Note: The length that can be set in the `**New sample**´ window is not relevant - instead, the original length of the sound effect is used.

- The **Silence button** creates a completely silent audio sample with which, for example, you can influence parts of another audio sample indirectly for the duration of the silence (see Audio-Mix - indirect volume control).

- Use **Sine Wave Sound** to create a tone the frequency (440 Hz or 1 kHz) and volume (-20 to 0 dB) of which you can define. Soft crackling may be audible at the beginning and/or end of the sinusoidal tone. This cannot be eliminated entirely during playback.

The samples created in this fashion are added to your sample list.

(8) Special can be used to apply a number of special effects to the audio sample, many of which are however only available or worthwhile on stereo audio samples. With these functions, SMART EDIT creates a copy which includes the desired changes, i.e. the original audio sample is preserved unchanged. The following special functions are included as standard:

- Width
This function artificially increases the distance between the loudspeakers. This increase is achieved by negative channel crosstalk. You can select a width of between 0 and 175%.

- Copy Channel
As can be seen under Mode, this function copies the left-hand channel to the right-hand channel or vice-versa, as desired.

- Swap Channels
This function interchanges the left-hand and right-hand channels.

- Volume
Use this function to increase or reduce the volume for the audio sample in question from -20 to 6 dB.

- Volume LR
Use this function to adjust the two channels (left and right) of an audio sample separately. Here too, you can select within a range from -20 to 6 dB. Mono switches the stereo signal to mono.

- NOP
This function cannot be used to make any changes to your audio sample. As with the image processing effects, it is used by MacroSystem for internal debugging.

- Mute
This function mutes either the left-hand and/or the right-hand channel as desired. In addition, you can also deactivate the function using the `---´ button so that the audio track is only muted for a specific period of time and so that you need not remove the effect.

- Surround
The surround effect is used in conjunction with a surround receiver or amplifier to assign the sound of an audio sample to a certain channel, i.e. to a certain loudspeaker. It can be used to create interesting acoustic impressions, in particular during audio mixing with commentaries. On a normal mono or stereo television set, surround audio is reproduced as „ordinary" audio, i.e. without surround effects, through a single or two loudspeaker(s). A film containing surround effects is thus suitable for playing over any set. Once the surround effect has been selected, the following options are available:

• front left
Sound is played through the front left-hand loudspeaker only.

• front centre
Sound is played through the front centre loudspeaker only.

• front right
Sound is played through the front right-hand loudspeaker only.

• rear
The sound is played through both rear loudspeakers.

• rear left
Sound is played over the rear left-hand channel only. This is possible only with a receiver/amplifier which supports **Pro Logic II (trademark of Dolby Laboratories)**. Without Pro Logic II, sound is played simultaneously over the two rear channels and the front left-hand channel, creating an effect which is similar but not as clear.

• rear right
Rear right functions in a similar manner to rear left, but for the right-hand rear channel.

In all cases, a mono audio sample is first generated from the original stereo sample, as playback is ultimately through a single loudspeaker only.

- Sample -> Scene
Clicking on the **Sample -> Scene button** creates a video sequence with black background from your audio sample, which appears in the scene bin. You can use this video sequence as a basis for further video operations (e.g. insert editing). This function can greatly simplify audio-based editing. Please read Chapter 4.3 for further details.

- Copy Sample
Clicking on the **Copy Sample button** creates an identical copy of the the previously clicked sample in the list of audio samples on the right. This function is useful when you wish to use both the original material and a modified version. The copy appears in the samples list with the same name as the original, but is identified with the suffix .K (e.g. A1.K).

- Clipboard
If your system supports this function, you can place the audio sample onto a **clipboard**. Clicking on Clipboard calls up four buttons: **Clipboard -> Project**, **Sample -> Clipboard**, **Remove sample** and **Sample from project -> Clipboard**. These buttons have the same functions as in the video menu.

Note: *If you click on Delete Sample you will observe that the OK button in the dialog which appears is disabled (grayed out) and cannot be activated. This is a safety measure to prevent you from accidentally deleting an audio sample. If you really wish to delete an audio sample, first click on the audio sample to be deleted (even if it is greyed out) and then on the OK button (which is now enabled). The audio samples are stored in the samples list and can be inserted into an audio track in the Audio-Mix menu.*

In the same way, first mark the audio samples in the samples list which you wish to place on the clipboard.
Should the samples list contain no samples, the message **No active audio sample available** is displayed.
The main purpose of the clipboard is temporary storage of audio samples before they are used in other menus. The clipboard is thus available across projects.

Any audio samples placed on the clipboard are deleted when the system is switched off.

Also in this menu you see the button "**Pre-listen**" under the effect options.
Here, you have the option of either deactivating the function ("**off**"), i.e. either hearing the effect or the original. Once you select either **Effect** or **Original**, this will loop-play several seconds of the effect selected in the list (applied to the music selected in the list of sound clips) or some seconds of the original sound piece. This option can save you a lot of time, because the audio effects can be heard and compared with the original without being rendered.
This function also displays signal amplitude as a control.
Flashing blue indicates that everything is in order, flashing yellow indicates a risk of over-modulation during audio mixing (only if several over-modulated segments are mixed), and flashing red indicates over-modulation.

(9) Click on the **Split button** to access the Split Sample menu. You can then split audio scenes in the same way as video scenes. The name of the audio sample is displayed at the top on the right-hand side. The name is followed by .1 or .2 etc. (e.g. A 1.1 or A 1.2). You can of course click in this field to call up the keyboard again, and rename the audio sample. Clicking on the **Split Position button** now enables you to split the audio sample. A graphical display of the part to be split off is shown in the bar at the bottom. In addition, the wave form and audio scrubbing (Chapter 3.2), which cannot be disabled in this menu, show the point of the audio sample at which you are located.
The Use and **Drop buttons and the arrow buttons** have the same function as in the **Split Sample menu** of the image material.

Click on the Play button to start playback of the audio sample currently being edited. During playback you can split the sample for example at a bar by clicking on **Use** at a suitable point. Your audio sample will be split at this point without playback being stopped.

If you whish to copy the split audio pieces into the Storyboard in the Edit screen, you need to first activate the "**Insert as scenes in storyboard**" by marking the little box.
After splitting the sample and confirming with "**Ok**" or waiting until the end of the sound, the video data will be created.
The sample parts are automatically copied in the form of empty scenes, containing the respective parts of the sound. These empty scenes are placed into the Storyboard in the Edit screen – they'll be easy to spot: Black scenes with a little music note symbol.

Additionally, you can now press the "**Replace**" (or "**Insert**") button (see chapter 5.5, item **(16)** / **(12)**), so that the selected empty audio scene takes the place of the selected scene in the Storyboard. If the video scene is too long, it is trimmed to the right length at the end.
This function is great for audio pre-editing as you can comfortably make your cuts and then implement the rhythmically cut up audio piece to any video material.

Once you have split your audio sample, the sample list shows that copies of it have been made and that your original sample is still available.

(10) Use the **Trim function** to remove unwanted components at the beginning or end of the recorded or split audio material. Coughing in the commentaries and residual material from adjacent CD tracks can thus be eliminated. The Trim function is also familiar to you from video editing, and functions in the same way with audio. The wave form and audio scrubbing (see Chapter 3.2) cannot however be disabled in this menu.

(11) Click on the **Delete button** to delete the selected audio sample.

(12) Click on the **Undo button** to undo deletion of an audio sample. The last ten samples deleted can be recovered in this way. Deleted scenes cannot be reactivated following a restart.

(13) The name of the audio sample clicked on in the sample list is displayed automatically in the **name field**. The name can be changed in the manner familiar from video. Click in the name field to call up the keyboard. The length of the audio sample is displayed in the adjacent field.

(14) Use these buttons to control the **Stop/ Record/Play** functions for the audio sample highlighted in color in the audio list. You can make corrections to the volume with the aid of the scrollbar below the volume display (1) while recording is running.

(15) Click on the **CD Recording button (only on models with integral DVD drive)**

to the left of Record/Stop/Play to call up the **CD Import**. Click on this **open** symbol,

to open the drive drawer in which you can put an audio CD.

Note: The audio format MP3 is also supported. It is possible to import from CD and DVD.
Then press the button on the drive (or press against the drawer) in order to close it again.
Now click on the **Display CD contents** button to read all available tracks on the audio CD inserted beforehand into the DVD-RW drive. To sample your tracks, check the box next to **Play intro time** in order to play the audio sample automatically as soon as it is selected in the list. You can choose between different playback times or you can switch off this function altogether.
You can switch to a different track or start import with **OK** at any time during play.
You have the following possibilities to enter titles: Note the box above the vertical slider. It has three different modes that can be changed by clicking into the box (see chapter 3.2, Sliders).

• If you wish to import merely one text, make sure to mark the box with an X. Select the item in this fashion and confirm with "**Ok**".
After entry the window "**CD Import**" closes automatically and you see the title displayed in the list of sound clips.

• If you wish to import multiple texts from the CD, make sure to activate the box by placing a checkmark). Mark the desired text items and start the import procedure by clicking onto "**Import active track**" (the window will remain opened) or "**Ok**" (window will close).
The tracks read in beforehand are now displayed in the list of audio samples.

• If you whish to import all titles from the CD, first mark all titles by activating the horizontal stripes in the box, or click onto the button for `**All**´. It is unimportant which title in the list has already been selected. If you cancel the operation while the titles are being read, then all titles that have been successfully read are displayed in the list.
You then see the titles displayed in the list of sound clips.

(16) Here, you can see a symbol of an arrow pointing to a CD.

Click on this button and a screen called "**CD compilation**" appears. This screen allows you to select samples for your audio CD. You could burn your audio comments or extracted original sounds to CD or even load a music CD and re-burn it with a different track order.
On the left you can see a list with sound samples ("**All samples**"). Select the desired sample and press "**Add**". The sample should now appear

in the right list ("**Selected samples**"). This way, you can continue adding sounds to your CD. Any samples selected from the left list are highlighted with a little dot.
Take care not to overstep the maximum length of 72 minutes for the CD. The "**Estimated usage**" of the CD can be monitored on the top of the screen. Of course, you can remove any tracks from the list again by simply pressing "**Remove**".
Once you have finished assembling the list of tracks for your CD, press "**Ok**" and insert an empty CD into the disc tray. A CD-RW, the system can optionally delete the contents first, before the tracks are burned. Please wait with removing the CD until the system tells you the CD was burned successfully.

(17) Click on one of the menu symbols to access the menus **Edit, Audio-Mix and the main menu** directly from this menu.

5.11 Audio-Mix

Use this function to arrange recorded commentaries and the background sound in the storyboard, add audio effects, and fine-tune the volume for the sound tracks.
Audio mixing is similar in principle to video editing.

The storyboard with the scenes and video effects which you have added to it is visible at the top of the screen. Unlike the storyboard view of the Edit menu, transition effects are however displayed as discrete scenes in the storyboard. This display mode is advantageous, as it enables other audio samples to be situated exactly within the duration of the effect.

Below the storyboard are several horizontal bands, the sound tracks.

If you have set the control "**Audio tracks**" to "**normal**" in "**Project settings**" under "**Audio settings**", the specific differences between the sound tracks are as follows:

Audio samples from the original sound track, the commentary track and the effect track(s) are bound to the scene(s) above them. Where changes are subsequently made to scenes before and after the audio samples, the sample remains synchronized with its previous position. Where changes are made to scenes which overlap the audio sample in time, the latter must be deleted (following a prompt). Audio samples in the music tracks are not bound to a scene; instead, they retain their position in relation to the starting point of the storyboard. Changes to the video before or during the audio sample result in shifts which are, however, generally uncritical in the case of background music etc.

Owing to this difference in behaviour, the tracks bound to the video material are particularly suitable for commentaries or for sound effect dubbing.
The music track is intended for background music and similar audio. Provided the differences between tracks are observed, it can of course be used for any other purpose.

If you set the control "**Audio tracks**" (in "**Project Setttings**") to "**Selection**", then you can freely specify the behavior of each soundtrack (except the original soundtrack).
In the audio editing menu the symbols next to the soundtracks change into numbers and arrows, indicating to you the setting for each soundtrack.

The following procedure must be followed for audio mixing:

1. Add audio samples to a sound track
- Select the desired sound track by **activating the symbol to the right of the track** or by clicking on the track itself (selected track turns blue).

- **Select the scene** in the storyboard approximately at which the audio sample is to begin.

- Click on the **Add button** and select an audio sample from the list displayed.

- The sample now appears in the track provided for it exactly at the beginning of the active scene in the storyboard.

2. Moving and trimming audio samples
To define the starting point exactly, select **Range**.
The **Range menu** is called up, with which you can
  - **move the sample** completely (Start ; select Position) or

• shorten the sound at the beginning or end (In and Out ; **select Trim**).

The corresponding image is also displayed, and you can also hit the Play button to play the full segment of video with the selected sound.

3. Creating and checking audio.
• Return to the **Audio-Mix menu** and select **Create**.

• From the color of the **horizontal color control bar** between the original sound track and the storyboard, you can ascertain whether the overall volume of all audio samples is faultless (**blue**) or over-modulated (**red**). Correct any over-modulated passages with the aid of the volume control or the wave form as described under Point 4.

• Click on the **Play symbol**. The sound is now played in mixed form with the sound from the other scenes. The video material concerned is played at the same time, and a volume level indicator is displayed.

4. Adjusting the volume.
SmartEdit offers a total of three methods of volume control:

• **Direct volume control**. Should one of the samples concerned be too loud or too soft, click on it. It is highlighted in blue. Now move the **Volume control** to adjust the volume. The volume characteristic is displayed in light blue in the background of the audio sample. Following recreation, you can play it back again and correct it if necessary.

• **Indirect volume control**. To emphasize a particular audio sample by reducing the volume of adjacent tracks, use the Correction function. Click on the sample to be emphasized, which is then highlighted in blue. Now use the **Correction button** and the slider adjacent to it to adjust the volume of all six tracks. This procedure modifies only the part of the adjacent sample selected using Correction which is parallel to the selected sample. The volume levels before and after the selected sample remain unchanged.

• **Volume control by means of wave form**.The wave form is the tool to use to increase or reduce the volume of an audio segment within an audio sample, for example in order to eliminate a loud unwanted noise. Click on the desired audio sample to highlight it in blue, then select the **Envelop** menu item. First use **Add** to insert three anchor points into the volume display beneath the wave form. In the area above all soundtracks are displayed to give you a better overview.
Then click on the leftmost of these three points in order to activate it. The color of the activated point changes from red to green. You can now move it to the desired position either by **clicking on it again and dragging it** with the trackball, by means of the **Position slider**, or by clicking on the **Range button**. Range causes the associated video still to be displayed in the background, enabling the position of the point to be selected according to its position within the video.

Place the first point horizontally ahead of the noise to be eliminated, without however modifying the vertical position of the point. Position the second point horizontally in the middle of the noise and drag it at the same time vertically downwards to dampen the sound. The third point marks the end of the noise: it should therefore also be at the same horizontal level as the first, but beyond the noise. Click on Create to reduce the volume of the noise substantially without changing the remainder of the audio sample.

To reduce the volume of longer ranges, use four points and drag the middle two points down.

The method of volume control employed in each case is therefore determined primarily by the task concerned:

• If the **volume of a complete audio sample** is simply to be increased or reduced, direct volume control is the solution. Using the wave form for this purpose would be to use a sledgehammer to crack a nut.

• If an **audio sample is to be dampened while another audio sample is playing**, for example the background music is to be softened for the duration of a commentary, indirect volume control is the most convenient solution. Modifying the audio samples by means of the wave form or splitting the music manually would also entail a disproportionate amount of work.

- If **unwanted noises are to be eliminated** from a audio sample or over-modulated passages of an audio sample adjusted to the general volume level, the wave form represents a powerful tool, albeit one which is not particularly easy to use. Once an audio sample has been edited by means of the Wave Form function, indirect volume control is however subject to certain limitations.

5. Fading audio samples in and out.
To fade specific audio samples in and out gently, click on the sample concerned to highlight it in blue. Now click on **Fade** to call up a dialog in which you can bind fading in and out to specific images, either by selecting a predefined time value, or by clicking on and moving the appropriate fader.

6. Adding audio effects.
Audio effects (standard effects, surround effect, supplementary effects) can be added to individual audio samples in the same way as to complete sound tracks.

- To add an audio **effect to an individual audio sample**, first select the desired sample, highlighting it in blue. Then click on **Effects** and select an effect from the list. If necessary, adjust the effect. Then confirm your selection with **Insert/Change**. A small fx at the right-hand end of the audio sample concerned now indicates the presence of an audio effect in the overview of all sound tracks.

- To add an audio **effect throughout a complete sound track**, i.e. to all audio samples of a sound track, click on the fx symbol on the left of the sound track concerned. Select an effect from the list presented. Make any effect adjustments required, then confirm your selection with **Insert/Change**. A white point on the left-hand button indicates the presence of one or more effects in the sound track concerned.

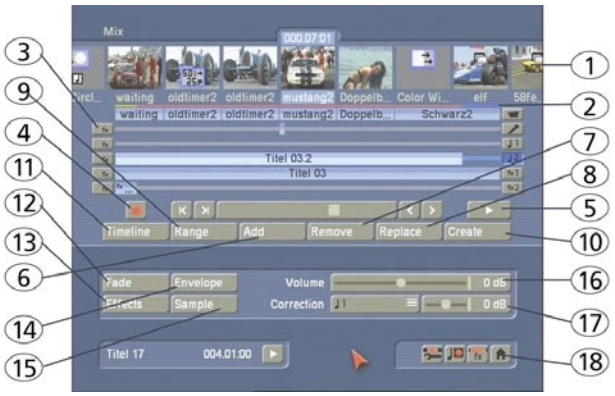
- To **delete an audio effect** again from a sound track or an audio sample, call up the audio effect menu again (as described above) and click on **Remove**. Remove functions irrespective of the effect selected, leaving an effect-free audio sample or effect-free sound track.

7. Checking audio mixing.
- Add the remaining audio samples in turn and adjust the volume, fading and effects as required.

- To check an individual audio sample in detail, first select the desired audio sample, then click on the **Timeline menu item**. The timeline display shows all audio tracks in relation to the selected audio sample. You can use the **scroll-bar** beneath the timeline display to move the displayed passage, click to move the sound track to a different audio sample, and call up the functions **Fade and Envelop** from within the timeline display.

8. Creating audio.
Create the sound. The color control bar immediately beneath the storyboard should no longer contain any yellow components.

The Audio-Mix Menu



(1) The **storyboard** and its operation is familiar to you from other menus. You can use the slider to move very quickly through the storyboard scene by scene.

Use the arrow buttons to click either through the video scene by scene, or from one audio sample to another when there are several audio samples below a single video scene. The audio samples of the currently activated sound track are selected in this case. This function is very helpful when a large number of audio samples are located below a single video scene, as the samples are displayed only very briefly during normal playback.

Select the desired sound track either directly or by clicking on the **corresponding symbol on the right-hand side of the screen**.

(2) This **color control bar** directly beneath the

storyboard shows the range of the original video scenes in which the audio has not been created (yellow) or has already been completely created (blue). Over-modulation is indicated in red.

(3) Select a **button with the fx symbol** to the left of the sound tracks to add an effect for the complete sound track. Effect selection in the Audio-Mix menu is described under Point (13) Effects. A further point in the associated button indicates the presence of an effect in the sound track concerned.

(4) Click on the **Record button** to play the storyboard (from the current scene onwards). Simultaneous recording is possible through the selected audio input. For instance, if you have selected the microphone input, you can record a commentary for your video. During audio recording, a volume level indicator is overlaid over your video material at the lower edge of the screen. The recorded commentary is subsequently added automatically to the sample list. If the commentary track is active and provides sufficient capacity for the audio sample, it is automatically placed in the commentary track.

(5) Click on the **Play button** next to the scrollbar of the storyboard to play from the scene currently located in the centre of the video. The other simultaneous tracks are played provided they have been created. Should the other tracks not have been created, only the currently selected track is played back. This saves you from having to repeatedly create tracks, for example when you wish only to check the position of the commentary. Video is generally played at the same time. During play, a volume level indicator is displayed, showing any over-modulation. The volume level indicator has a peak-level indicator, i.e. the maximum level is displayed continuously until it is exceeded once again.

By contrast, the Play switch at the bottom of the screen plays back the current active audio sample. Only audio is played back here, of course there is no video here. Here too, a volume level indicator is displayed, indicating any over-modulation.

The name of the sample to be played back appears on the left of the Play symbol and the counter. Click on Stop or the right-hand trackball button to stop play.

(6) Click on the **Add button** to call up a dialog showing the list of audio samples. Select the audio sample of your choice here, either directly or with the aid of the slider with which you are already familiar. The audio samples already added are marked with a point next to the length. Beneath the audio samples is a Play button which you can use to listen to the selected audio sample again in order to check it before adding it.

Confirm with OK to close the Add dialog. The selected audio sample is added to the active sound track.

The audio sample is placed by default in the storyboard at the very beginning of the active scene (the scene in the frame). Use the Range button to move it again (see Point (9)).
Should an audio sample already be present at the current point in the selected sound track, the Add function inserts the sample after the material which is already present. Should there be insufficient space, i.e. the audio sample be longer than the gap, the sample is shortened at the end such that it fills the gap exactly.

If an audio sample is inserted at the end of the storyboard and is longer than the last scene, it is automatically trimmed in to the length of the scene. Click on the audio sample to read the new length in the bottom left-hand corner.
If the storyboard is subsequently lengthened, the audio sample is trimmed out again (up to a maximum of its original length).

(7) Hit the **Remove button** to delete the active audio sample. This function has no effect upon the original track, as only audio samples from the supplementary tracks can be deleted. Remember that removing a audio sample may necessitate recreation.

(8) Clicking on **"Replace"** opens the list of sound clips and you can select a clip that now replaces the previously active clip on the soundtrack.

(9) The **Range function** is used for adjusting the position and the IN and OUT points of a audio sample. The Range button can be selected when an audio sample is clicked upon and thus activated. A Trim menu is called up similar to that for the trimming of video scenes. Once you have selected Position, you can move the entire audio sample with the aid of the Start button. Should

the audio sample be too long, you can also shorten it at the beginning and end. Select the Trim function and then the IN and OUT buttons in this case. The sound characteristic is displayed by the wave form (Chapter 3.3). Play back again to check any changes. The new position is also shown graphically when you return to the Audio-Mix menu.

(10) SMART EDIT is able to play back several audio tracks simultaneously only if they have first been created (if necessary by clicking on **Create**). Portions which have not been created are displayed by yellow regions in the color control bar at the top. The entire audio visible in the active image size is generally created together with the active audio sample (highlighted in blue), even if it lies outside the window. If the entire storyboard is to be created, launch creation from the Finish menu.

(11) Click on the **Timeline button** to call up a new window in which the active audio sample is displayed in full and which shows the other samples in relation to it. The active audio sample thus serves as the dimension for the full width of the new window. This permits a larger (full-screen) display of very short audio samples (which would otherwise appear only as a narrow line in the storyboard), whereas the full length of very long audio samples (which would otherwise run over the limits of the visible region in the storyboard) is displayed with all audio samples of adjacent sound tracks. The timeline thus offers a scaled view by which, for example, the volume characteristic or any fades can be viewed more easily.

This window displaying the time data serves mainly to provide a better overview. You can however also use it to move the displayed part below the timeline display with the aid of the scrollbar, to change the sound track to a different audio sample by clicking on it, and to call up the functions Fade and Envelop from the timeline display.
The symbols **>>** and **<<** indicate that the audio sample does not end at the edge of the timeline, but continues.

The original sound track is displayed twice, one display above the other. The reason is as follows: if for example you have inserted a transition effect, two audio samples overlap. In the timeline display, these two audio samples are then displayed in two lines (in both original sound tracks).

(12) Click on the **Fade button** to call up a dialog in which you can adjust **fade-in and fade-out** of the currently active audio sample. The audio volume is consequently reduced or increased for the selected duration (which of course cannot exceed the length of the audio sample), reaching the selected baseline volume at the end of fading.

You also will find the control **"Audio Settings"** in "**Project Settings**", with which you can specify whether the audio fade should be "**constant**" or "**lowered**".

Certain practical time values for fading in and out are already provided as defaults. Should you therefore wish to fade a commentary in softly, you can for example select a fade-in time of 1 second (**1 s**), and thereby prevent the sound from being clipped.

Should you wish to fade out an audio sample, the volume is gently reduced towards the end of the sample and is completely silent at the end of fading.
The fade-in and fade-out times act upon all selected changes, i.e. including any changes to volume of the adjacent tracks. For example, as the commentary volume is being increased, the background music is gently reduced to the selected value.

The volume characteristic is displayed clearly in the audio samples.
If you then trim a sample or move it, the fade in and fade out times remain.

(13) The **Effects button** calls up the Audio Effects menu. Audio effects can be applied to either a single audio sample or a complete sound track.

- To add an audio effect to an audio sample, first select the desired audio sample, which is then highlighted in blue. Then click on **Effects**.

- To add an audio effect to a sound track, call up the Audio Effects menu as described under Point (3) by means of the **fx button** to the left of the sound tracks.

The audio effects are divided into several categories:

• **All**
All effects are displayed.

• **Standard**
Only the effects contained in the SmartEdit software are displayed.

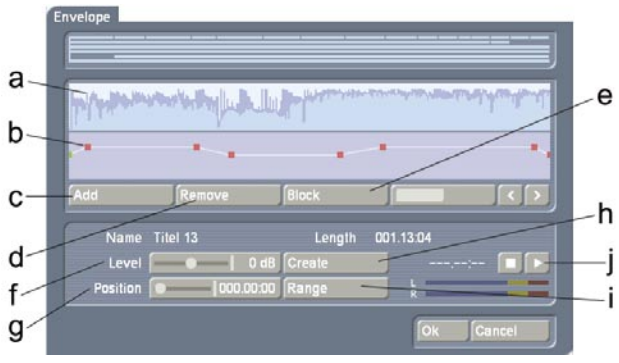
• **Optional**
Only the effects from any supplementary software packages are displayed.
• **[Effect package]**
Only the effects from the [effect package] concerned are displayed.

In order to combine multiple audio effects within one sample, note the small box above the vertical slider. Click into the box until you can see a Checkmark. Now you can activate all desired effects one after the other. If the box contains horizontal stripes, all effects will be selected. (This is similar to the Clipboard and the CD-Import function (see chapter 3.2)).

Furthermore, you'll see the "**Archives**" here – a place to store your previous effect combinations which can later be applied to different samples.

(14) The Envelope (audio wave form) of an audio sample can be edited directly with the Rubber Band function by means of the **Envelop button**. First select the desired audio sample, after which it is highlighted in blue. Then click on Envelop

The Envelope (Wave Form) Menu



(a) The volume of the selected audio sample is displayed as a **wave form** at the top of the Envelop window. Above you see a representation of all soundtracks for a better overview.

(b) The volume of the selected audio sample can be increased or reduced selectively in the **volume display** directly beneath the wave form display by means of the rubber-band function. In this case, first specify the editing points within the audio sample at which the volume is to be increased or reduced. Insert these points either by left-clicking in the volume display close to the desired position, or by clicking on the Add button beneath the volume display.
Now activate one of the new points either by clicking on it directly, or by selecting it with the aid of the scrollbar and the function for stepping through individual frames on the right-hand side beneath the volume display. The color of the active point changes from r
ed to green. The point can then be positioned exactly as follows.

• **Positioning in the volume display**
Click on the activated (green) point again. It changes color from green to blue. Drag the point horizontally to the desired time position in the volume display. To increase or reduce the volume, move the point upwards (louder) or downwards (softer). Note that the first and last points in the volume display cannot be moved horizontally, i.e. against time. Left-click again to confirm the position of the point.

• **Positioning by means of the Level slider**
After clicking on Position, the active point can be moved horizontally to the desired time position. Next drag the Level slider to the right to increase the volume or to the left to reduce it.

• **Positioning against the video background**
To determine the position of a point according to its location within the video, click on Range The start position can be determined either by Position or by stepping through individual frames. Click on the right-hand trackball button to adopt the selected setting. Use the Level slider to select the volume at the desired point in time.

Follow the same procedure with the remaining points in the volume display until the desired result is achieved. Then create the result.

(c) Using the **Add button**, insert an editing point after the currently selected (green) point in the volume display. Note that a point cannot be inserted between two points located very close to each other.

(d) Use the **Remove button** to delete the selec-

ted editing point from the volume display.

(e) The **Range button** can be used to group several adjacent editing points to form a range, i.e. a common group:

- Mark the outer left-hand (first) point of the desired range by left-clicking it or by stepping through individual frames.

- Click on Range.

- Mark the outer right-hand (last) point of the desired range by left-clicking it.

All points within the marked range also change to green and are thus marked as active. The following functions can now be used on this range:

- Increase or reduce the volume level for the entire range. Use the Level slider for this purpose.

- Move the position. Use either the Position slider, or select the position by means of Range.

- Delete all points in the selected range. Click on Remove in this case.

Click in the scrollbar beneath the volume display or on any point to terminate selection of the range.

(f) The **Level** determines the volume of the active (green) editing point or of the selected range. The volume can be selected in steps of 1 dB from -30 dB to +30 dB.

(g) Use **Position** to determine the position (in time) of a point or a range in the volume display.

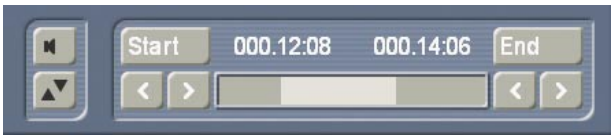
(h) Use the **Create button** to launch creation of the complete audio sample shown in the volume display.

(i) Use **Range** to determine the position of an editing point or a range according to its location within the video.

- During determination of the position of an individual point, the following menu is displayed against the background of the current video:

Determine the position of the selected point either using the scrollbar following activation of the Position switch, or by means of the arrow buttons **<** and **>**.

- When determining the position for a range, the following menu is displayed against the background of the current video:



The position of a range is determined either from the start point (Start) or the end point (End), or by means of the arrow buttons **<** and **>**.

(j) Use the **Play button** to play the audio sample currently shown in the wave form display, provided it has been calculated. The play position in terms of time is shown next to the Play button in **minutes:seconds:frames**. The instantaneous play volume is shown on the volume display. Play can be stopped at any time by means of the Stop button.

Click on OK to terminate editing of the wave form and to accept the settings. Note the following:

- The **Volume and Correction controls** are no longer available for the edited audio sample following editing of the wave forms. You can therefore no longer modify the volume of the wave form audio sample by means of the Volume control, nor the volume of a parallel audio sample in relation to the wave form audio sample by means of the Correction control.

- Insertion of a fade into a wave form audio sample deletes the edited wave form (following a prompt). All changes to the wave form audio sample are then lost.

- Indirect volume control of a wave form audio sample is still possible by Correction from another audio sample. Creation must however be repeated.
- Audio effects may be inserted into wave form audio samples.

- The sample envelope remains if you have trimmed or moved the audio sample.

(15) Click onto the "**Sample**" button. A window

similar to the "**Scene**" video effect menu will appear. At first, you can see the name of the sample, which can be changed if needed. The default name is the name of the sample.
Next, you can decide if you want to create a sample that runs across the length and position of the selected sample, combining all audio tracks in that position. To do this, click onto `**Sample**´ and then `**Ok**´. The sample will then be added to the `**Audio Record /Edit**´ screen.

Another possibility is the `**Sample + Scenes**´ function. Here, you can determine that the new sample starts at the beginning of the first scene – and ends at the end of the last scene it is positioned under.

Alternatively, you can select any time range for creating the new sample. A sample is created, containing all sound from all soundtracks.
Click onto `**Range**´, confirm with `**Ok**´ and select the IN and OUT points from the already familiar Range menu. The Envelope (chapter 3.2) helps you to do this. You can de/activate it using the speaker symbol.
Click onto `**Ok**´ in the Range menu. This creates the sample and adds it just after the currently activated/marked sample in the Record/Edit menu.

(16) Use the **Volume button** to adjust the volume of the active video scene. You can reduce the volume of the scene (negative dB value), mute it (slider fully to the left), or increase the volume (positive values up to 30 dB).

Use this control for example to prevent a soft sound from being drowned by another sound which is too loud (e.g. piece of music on the background track).

A change in volume is shown in the light-blue bar which forms the background to the audio samples. If the volume is reduced, the bar at the lower edge of the audio sample is also displaced. The longer the audio sample, the more clearly of course the characteristic is displayed.

(17) The **Correction button** modifies the volume of an audio sample for the complete duration of another audio sample. The change is shown by the blue bar in the audio sample.
Once you have selected an audio sample (e.g. music) in one of its sound tracks (e.g. music sound track), you can then click on the Correction button. A list is displayed containing all six sound tracks. From this list, select the sound track (e.g. original sound track) in which you wish to modify the volume of an audio sample (e.g. vocals). Then slide the control located on the right of it to the left or right (to reduce or increase the volume respectively). This changes the sound in the track which you previously selected (under Correction) for the complete duration of the audio sample activated in another track.
By way of explanation, consider the following example. You have assigned audio to three tracks. The first contains the original sound, which extends throughout the storyboard. The third track contains a piece of music which begins while the original sound is running and which ends during a further original sound. Select this piece of music. Then click on the Correction button to call up a list of all sound tracks. From this list, select the original sound track and reduce the volume by means of the button adjacent to Correction until it is muted You now have no original sound for the complete duration of the piece of music. You can now hear the music at this point of the video without being disturbed by the original sound. The second track contains a commentary which begins in the middle of the piece of music and does not end until some time after the music has ended. Select the commentary. You can then reduce the volume of the music for the complete duration of the commentary by clicking on Correction, selecting the music track, and reducing the volume by means of the right-hand control.
The original sound, which was muted for the duration of the piece of music, must now also be switched off for the remainder of the commentary. For this purpose, create a new piece of music: silence. Create a generous length. Insert it after the piece of music, and trim it using the Range button up to the point in the video at which the commentary ends. If you cannot find the point in the video easily from the material, calculate the correct position if necessary.

The volume control for the track in which the audio sample is activated is of course not selectable under Correction, as changes affecting the volume must be made by means of the Volume button.

(18) Click on one of these menu symbols to jump from this menu directly to the **Audio Record,**

Edit menu and to the main menu.

5.12 Shutdown (OFF)

This button turns off the system. Clicking it does exactly the same as pushing the manual switch on the front.

The power-down procedure saves all settings, so that after turning on the machine later you can continue your project where you left off. The project is saved and then the system is shut down.

You can then turn on the machine only by using the manual switch on the front of the unit.
We warn against shutting down the machine by pulling the power plug or cutting power to the machine!

You should always turn off your system with the "**Off**" button or the front switch. Data loss may otherwise occur!

Chapter 6: VGA Mode

It is possible to connect a VGA screen to your system.
In the System Settings, you can use the "**Screen**" button to select the required mode – there are several modes available, depending on the hardware you are using (single-monitor use or dual-monitor use).

6.1 Dual-monitor use (VGA as extra monitor to the video monitor)

Please read this chapter carefully if you have connected a VGA (computer) monitor to your system in addition to your TV monitor.
Usually, the VGA option is included with your system. If you are using an older hardware variant, you may need to purchase this option separately.

You can use the VGA monitor to work in two-monitor mode. This means that you see the user interface on the computer monitor and your video material on the TV monitor.

This setup is fixed. You cannot view your video material on the computer monitor! Working with just the VGA monitor without the TV monitor is not possible in dual-monitor use!

You see differences between Video mode and VGA 1-3 in the following menus:

Video settings: In this menu you see only the operating panel for making settings on the computer monitor. Your video material is displayed on the TV monitor.

Recording: The operating panel for recording is shown on the VGA monitor. You see the recorded video on the TV monitor.

Editing: When you play the storyboard from this menu, the playback duration is displayed on the VGA monitor on top of the Edit menu. Your video is shown on the TV monitor without any menu overlays.

Splitting: If you click on this button, then the Split menu appears on top of the Edit menu. On the TV monitor you see the actual video. Now you can use the Split menu to cut your video scene while you observe the exact playback on the TV monitor.

Trim: This menu is displayed on top of the Edit menu, just like the Split menu. Here, too, you observe your video on the TV monitor.

Transition effects: If you playback the storyboard from this menu in order to view an inserted effect, then the Transition-effects menu is overlaid by the play indicator on the VGA monitor. Your video is displayed on the TV monitor without any overlaid controls.

Image Processing effects: Just as with transition effects, the playback display is shown in the Long-term effects menu and the video shown separately.

The button "**Screen**" offers the following four settings options:

Which mode you choose to select will depend on your existing equipment, and your personal editing style.

Video mode:
Both the user interface and your video material are shown on the TV monitor. Eleven scenes are shown in the scene bin. You see seven effects in the effects list, and in the storyboard you see seven scenes at a glance (without having to scroll).

VGA 1 (800 x 600, 60 Hz):
The user interface is rendered on the computer monitor at a resolution of 800 x 600. This means that the entire rendering is smaller than in video mode and that more scenes in the scene bin, and more entries in the effects list can be displayed. The setting 60 Hz means that the screen image is repeated 60 times per second. The higher the Hertz frequency, the higher the image repetition rate and the less the picture flickers.

The following two settings are not supported by all hardware variants:

VGA 2 (800 x 600, 75 Hz):
If your VGA monitor supports this setting then you can also use it with SMART EDIT. The only difference to the setting above is the frequency. The picture flickers less.

VGA 3 (1024 x 768, 70 Hz):
This setting also enables rendering of more scenes and entries. In addition, flicker is as little as with VGA 2.

6.2 Single-monitor use (VGA as an alternative)

Instead of using a television you can use the VGA port to connect a computer monitor (also a flat screen). However, you cannot run the system with both screens at the same time in single-monitor-use.

A VGA monitor will provide a calmer picture of the menus and video footage.
You must adjust the "**Screen**" setting accordingly in the "**System settings**" menu to the desired VGA mode. You can choose from several VGA options. Some examples:

VGA 1 (800 x 600, 60 Hz)
VGA 2 (800 x 600, 75 Hz)
VGA 3 (1024 x 768, 60 Hz)
VGA 4 (1024 x 768, 75 Hz)

But take caution: If you want to use a VGA monitor, you must connect both a television and a VGA monitor to the system when you start up the system for the first time! Once you have started the system, you will see the menu displayed on the television. After you set the "**Screen**" button to the desired VGA mode, the system restarts automatically and then displays the user interface on the VGA monitor. You can now disconnect the television from the system – the television was only needed in order to start up the system the first time.

A few limitations apply when running the system with a VGA monitor but these are not relevant to the final results of the film. In the following we would like to give you a few tips on how to work with VGA mode.

• Since the screen refresh rate of a VGA monitor is not the same as a television's refresh rate (50 Hz), the video footage will appear jerky when played – though this of course has no effect on the video output via the DV interface. If your VGA monitor supports a frequency of 75 Hz, we recommend you use a VGA resolution of 2 or 4 for PAL in order to minimize picture jerkiness during playback. For NTSC, we recommend you use the 60 Hz modes, VGA 1 or VGA 3.

• Compared to video mode, VGA mode handles complete pictures (non-interlaced). This results in a comb effect appearing on moving objects (e.g. camera sweeps or cars driving by) so that the edges no longer look sharp (fringed). This limitation is of course only of relevance when displaying footage on a VGA monitor and is not included in the actual video itself.
To change this, go to the "**System Settings**", press the "**Screen**" button and select the "**Field**" option. This way, playback is exempt from artefacts.

• The color saturation and contrast properties of the picture displayed on a VGA monitor are very weak but they are displayed correctly in "**Video**" mode (television). Therefore, please avoid increasing the saturation or contrast since this could lead to color bleed or distortion that is not visible on the VGA monitor.
The picture sharpness is also displayed differently in VGA mode than it appears in the final video. After you finish editing the video, we recommend you check the saturation, contrast and picture sharpness of the footage on a television in video mode.

• The entire video picture including the overscan area is displayed when working with various menus in VGA mode (e.g. when playing, trimming or splitting a video). This area sometimes contains image distortion that is no longer visible when the video is later exported or viewed on the television. When you are positioning titles, we therefore recommend you do not place them too far into the area around the edges of the picture or else the letters will no longer be visible later on. In any case, please make sure you carry out a final check by watching the video footage on a television.

Chapter 7: Tips & Error Handling

This collection "**Tips and Error Handling**" will continue to grow. We are always happy to receive your ideas and suggestions! In the following pages you will find some of the most frequently occurring problems and tips for handling them.

Please become familiar with the following tips and help on errors. If you can't find the solution to your problem here, then contact your dealer. He or she will gladly answer your questions concerning operation of your machine. The Macro-System hotline can only help you with technical problems.

More support information can be found at:
www.macrosystem.de (Europe)
www.macrosystem.us (North America)

Tips:

If you have installed the Power-Key Option, you have the possibility to arrange the scenes within the storyboard. The key combination
SB, Ctrl, c
allows you to copy a scene and position it at another place by clicking the key combination
SB, Ctrl, v.
If you wish that the scene won't be shown at its original position, copy it with the combination
SB, Ctrl, x
and place it at another position.
If you wish to trim a scene which is to be found in the storyboard, call up the trim menu by pressing the combination
SB, t.

SWITCHING ON THE MACHINE

Problem: Every time the machine is turned on the installation query appears.

Solution: After successful installation you must remove the SmartMedia card or CD/DVD from the machine (and store in a safe place). The system then starts and displays the Main menu of the user interface.

CONNECTION OPTIONS

Problem: Can I connect other input devices?

Solution: Yes. You can connect most types of USB mice and trackballs that are available on the market. You can also use USB keyboards (**PowerKey Option**) or the **Twister** input device.

TRACKBALL

Problem: The trackball makes a grinding sound and/or cursor movement is jumpy or works only in one direction.

Solution: The trackball is probably dirty. Carefully remove the ball and clean it.

PICTURE AND SOUND

Problem: There is no video picture when I am trying to input from my VCR or camera. When I bring up the "**Video settings**" menu I see the menu but the screen is otherwise black.

Solution: Check to be sure that:
– you have connected and activated the video input device. Are all the cables connected properly?
– you have activated the correct input.
– the video input device is actually sending a signal, meaning that it is playing a cassette with recorded material.

Problem: During titling letters appear correctly on the screen but after being recorded out or even during transfer "jaggedness" and "bleeding" are seen.

Solution: This is a problem to colors being too "hot", meaning that they are over-saturated. SMART EDIT can create colors that can only be processed by professional video machines and that lead to distortions when using VHS, SVHS, or even DV devices. In such a case simply reduce the color saturation and brightness (**section 3.2, Color box**). You will retain almost the same color shade but can record it without distortion.

Problem: There is no picture when I record from the video input device. The message "**No video signal**" appears.

Solution: Read the corresponding information in the hardware manual.

Problem: When recording the video material I hear no sound.

Solution: Set the correct input in menu "**Audio recording/editing**" so that the volume level is visible. Read the information in **section 4.3, step 2 (recording)**.

Problem: The audio is distorted.

Solution: Before recording, set the volume level so that overdriving (red appears in level display) does not occur.

Problem: The volume keeps changing when I play my storyboard.

Solution: Take care when dubbing that the volume of a track is not affected unintentionally by the settings for other tracks.

Problem: My video is off to the side. I can't see part of the menu.

Solution: The screen position depends on the monitor used. Screen positioning is configured according to the studio norm. It is possible that the display area is different for some non-professional monitors. Unfortunately, a simple solution to this is not possible. If you only use the monitor for your system, then it might make sense to have the monitor configured specially for it. In this case, contact your Dealer.

Problem: The camera supplies a picture that has too much of a blue tone.

Solution: Use the long-term effect "**White balance**" or "**Control Color**". If you wish to use other Image Processing effects in the same portion of the video, then select these from the "**Special**" menu so that new scenes are created which contain the additional effects. You can also use the multi-layering technique through the "**Scene**" button.

Problem: The television picture is unsteady and flickers strongly.

Solution: Reduce the contrast on your TV, which is usually set too high at the factory. You might also want to use a 100 Hz monitor.

OPERATING THE SYSTEM

Problem: I want to exit the main operating panel for titling and the DVD Arabesk menu but clicking on the right trackball button doesn't work.

Solution: If you want to exit the main operating panel in order to enter the titling menu, you must click on "**OK**" (to save your settings) or "**Cancel**". If the right trackball button could be used to cancel, then you might unintentionally lose the text you entered.
For the DVD Arabesk menu you must click on the symbol for the Finish menu.

Problem: The screen cursor won't move, or it can be moved but not used to do anything.

Solution: Your machine has "crashed". This is probably not a major problem. Press the switch on the front side and hold it down for about 4-5 seconds until the greeting message appears.

Problem: Creating individual effects is taking too long!

Solution: Create the effects in the "**Finish**" screen (click "**Create**"). This will create all remaining effects and audio.
If your system is equipped with 64 MB RAM, you can activate the background rendering (by clicking onto "**Smart Rendering**" in the "**system settings**" menu or by clicking on the dots in the upper right corner of the corresponding menus). This way, you can continue to work on your video project, while the rendering of the inserted effects is done in the background.
Please read the corresponding sections in

chapter 5:
chapter 5.1, item **(10)**
chapter 5.5, item **(24)**

Problem: I have a lot of scenes in the Scene bin and am having trouble finding the scenes that I am looking for.

Solution: Be sure to rename the scenes in chapters and sections when splitting or recording. You can also sort the scenes in the scene bin. To do this, delete a scene, select another, and then click on the Undo button, causing the deleted scene to be reinserted just after the selected scene.

Problem: Sometimes I can't insert a transition effect.

Solution: Transition effects cannot overlap! If an effect has already been assigned to an entire scene (can happen with very short scenes), then it is not possible to insert another effect.

Problem: I have already recorded a lot of material and would like to know how many more minutes I can record.

Solution: The remaining time (available space for video) is displayed in the "**Recording**" menu.

Problem: I've finished a project and would like to start another. How do I start?

Solution: If you want to keep your video material on the system, then you can start a new project in menu "**Project settings**". Otherwise you can choose the option "**Delete**", which after a confirmation request will delete all the data of your current project.

Problem: I can't find my project data!

Solution: Check the System settings screen. Perhaps you have activated the wrong project by accident.

ERROR MESSAGES

Problem: The crossed-out SmartMedia card symbol appears on the screen.

Solution: This symbol means that you should insert the installation SmartMedia card, because the card currently in the drive is invalid.

Problem: The ambulance symbol and a number code appear on the screen.

Solution: This symbol indicates a serious error (e.g. defective hardware). In this case, contact your dealer.

TURNING OFF

Problem: The machine won't turn all the way off -- the red light always lit.

Solution: The machine is in stand-by mode meaning that the red light is always on. This mode of operation saves electricity if you use the machine often. If you don't plan on using your system for an extended period of time, then you should pull the power plug (after having turned off the machine).

Problem: Is data lost if I pull the power plug for an extended period of time?

Solution: No, your data is stored on the internal hard drive. However, before pulling the plug you should power-down the machine correctly by pressing the power switch on the front of the machine or by clicking on the "OFF" button in the Main Menu screen. This also applies to all other cables. Never disconnect a cable from your system while the machine is operating!

Problem: The machine does not turn off right away. It takes awhile.

Solution: This is normal behavior for your system. Before the machine is actually turned off the current project is automatically saved, and this can last several seconds. Only then does the machine actually turn off. Even if the shutdown

program receives no message from the machine, it will turn the machine off, but only after several seconds.

Problem: I have a problem not contained in this list.

Solution: If you have access to the Internet, check out the following Web site:

http://www.macrosystem.de (Germany)
http://www.macrosystem.us (North America)

Here ("**Support", "FAQ**") you will find an updated list of FAQs (Frequently Asked Questions) that may help you. You can also call your dealer, or call our hotline if you have technical questions.

Chapter 8: HD Backup-System

8.1 What is a backup used for?

Some hardware variants support the backup functionality:
In addition to the exchangeable system hard drive, the system is supplied with an integrated hard drive, found in the inside of the unit.
This backup hard drive allows you to save your current project. It offers the same capacity as your system hard drive.

You can also make use of the HD Backup-System on other systems by upgrading your system. Further information can be obtained from your dealer or MacroSystem.

A backup can be helpful to save the edited material from time to time in order to avoid a possible loss of data, in case of a damaged system hard drive (e.g. during transport).

The backup drive is also helpful if you wish to do some "experiments" with some effects and would like to get back to the former version of your project back afterwards.

Another way to use the backup system is to save your data in order to exchange the full (complete) system hard drive with a bigger one, to copy the saved material onto it and continue working with it again (exchanging a hard drive is explained in the hardware manual).

You can make a copy of your footage in order to create two variations of a film (e.g. with different endings).

8.2 Starting the backup

If you want to do a backup of your video footage, please touch the "**Backup**" button (if available) at the front of the unit softly. This issues a warning from the user interface - confirm it. (This warning may appear in any menu you are working in.)

On other systems with a backup option, which may however not feature the front button, enter the "**System settings**" menu and click on the "**Hard-drive backup**" button.

A selection dialog then appears. In this dialog, click on the "**Backup**" function. A dialog is then displayed showing information on your source and target (backup) drives. Click on "**Begin backup**". The application asks you whether the last backup should be overwritten. Answer by clicking on "**Yes**". The system then begins copying your data from the system drive to the backup drive, and displays a progress bar showing the estimated remaining time.
Important: Should you click on "**Cancel**", the backup currently in progress will be aborted and the video material on the backup drive will remain incomplete. As soon as the backup has been completed, the progress bar is cleared and the information menu called up once again. Click on "**Quick**" to return to "**System settings**".
The saved material now remains on the backup drive until you overwrite it again. You can now replace the defective or full system drive with a new drive.

You do not need to wipe or reinstall the system drive in order to transfer data back to it. The material present on the backup drive automatically overwrites the data on the system drive.
Click once more on the "**Hard-drive backup**" button in the "**System settings**" menu. After confirming the "**Restore**" prompt, you will be presented with a dialog showing information on your source (backup) and target drives. Click on "**Begin restore**". The system begins copying the data you have saved on the backup drive to your (new) system drive. A progress bar showing the estimated remaining time is displayed.
Important: clicking on the "**Cancel**" button causes the active restore operation to be aborted. In this case you must completely re-install your system software. As soon as the restore operation is complete, the progress bar closes and the information menu is called up. Click on "**Quick**" to return to "**System settings**". Following a successful restore operation, you can record and edit further material. It goes without saying that this also restores access to all scenes and effects.

Important: During backup and restoring of your video material, only data actually occupying space on the hard drive are copied. Unneeded copies are not therefore made of empty drive space. This reduces the time required for copying.

Chapter 9: Ethernet-Transfer

9.1 General information

Since the installation of version 4 of SMART EDIT, Ethernet Transfer software is automatically installed on many SMART EDIT compatible hardware systems. This program enables you to connect your device to a TCP/IP network. You can then exchange video data (incl. original soundtrack) at high speed with PCs on the network and use other programs installed on the PCs to edit your video data, print images, send footage via email, etc.
The edited video footage can subsequently be transferred back to the system. (This is only possible with a machine that is already equipped with an Ethernet port. Some Avio devices do not have this kind of interface.)
Since it is not possible to transfer individual images (e.g. BMP, JPG, etc.) to the system, we recommend you create a scene from the image and then transfer the scene as an AVI file.
Your PC must fulfill the following software requirements: Windows (XP, 95, 98, 2000 or ME), Internet Explorer version 6.0 or higher and applications for editing the DV data (DV codec, Windows Media Player version 9.0 or higher, programs such as Adobe Premiere, etc.) The DV data are transferred as type-2 AVI files (see "Disk Transfer").

Please note: The following instructions describe how to use Ethernet Transfer with a PC that is installed with the Windows XP operating system. The various settings might be slightly different for the other operating systems – if necessary, please refer to the instructions for your operating system.

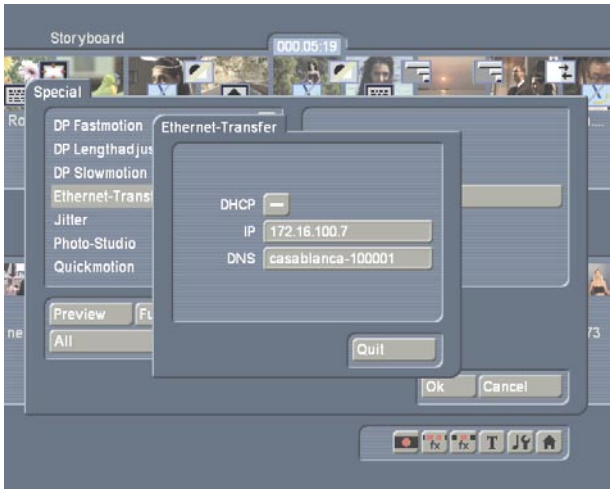
9.2 Cable connections

The easiest way to connect two devices (e.g. a PC and your system) is by plugging one end of an Ethernet crossover cable into your PC's Ethernet port and the other end into your system's Ethernet port (see hardware manual). You will need a Cat 5 type cable (or better) – you cannot use a Cat 3 or Cat 4 cable.

If you want to connect several devices to one another (e.g. two PCs and your system) you should connect the devices via a hub or switch. We recommend using 100 Mbit hubs or switches in order to achieve an optimum speed.

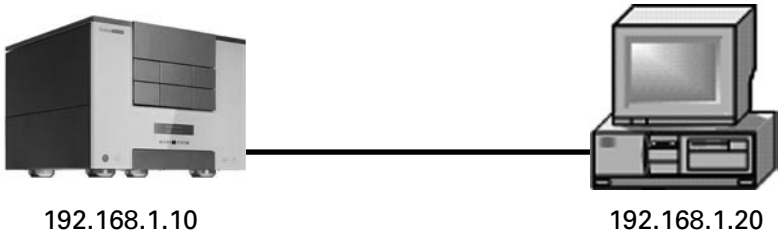
9.3 Ethernet Transfer on your system

You can start the program by clicking on the "**Special**" button in the **Edit** menu. You will see the Ethernet Transfer program listed there alphabetically in the upper effects section of the Window. After you have selected it, click on the "**Start Ethernet-Transfer**" function in the effect options section (right).
The following window then opens:

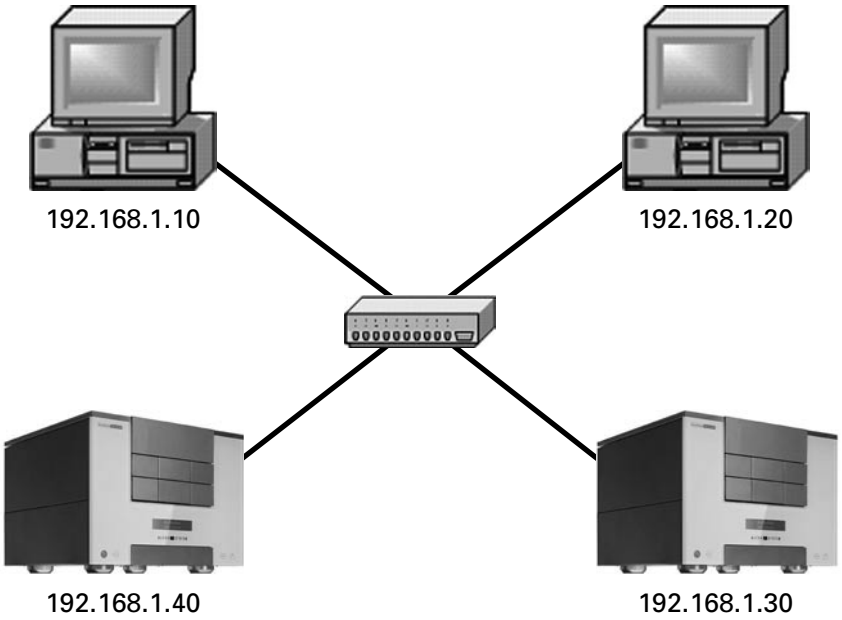


9.3.1 Manual configuration

In the “IP” field, specify a free (!) IP address on your network for your machine (e.g. 192.168.1.10). The check mark for the DHCP setting must remain deactivated –the name, in this case, also remains deactivated.

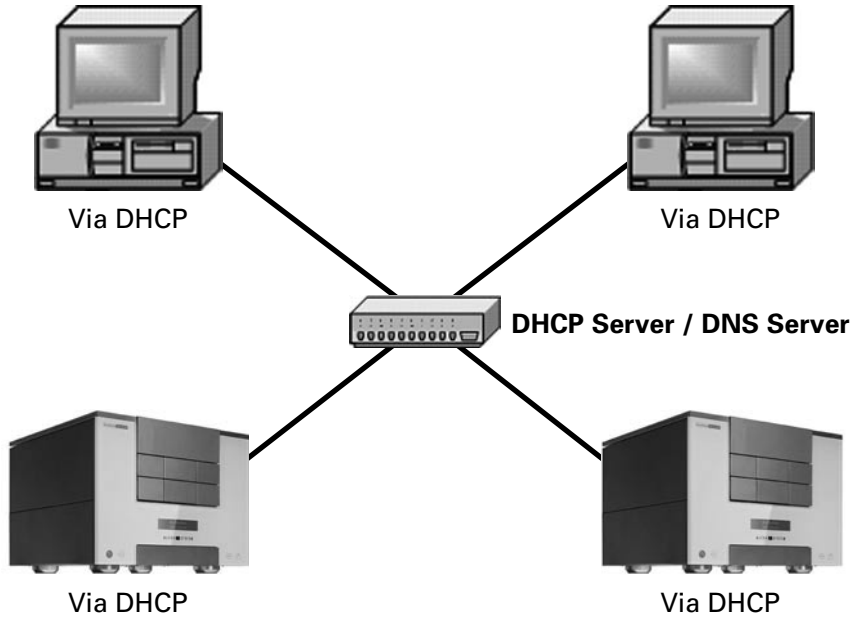


Direct connection between a PC and system (via a crossover Ethernet cable)



Star-shaped network (switch, hub)

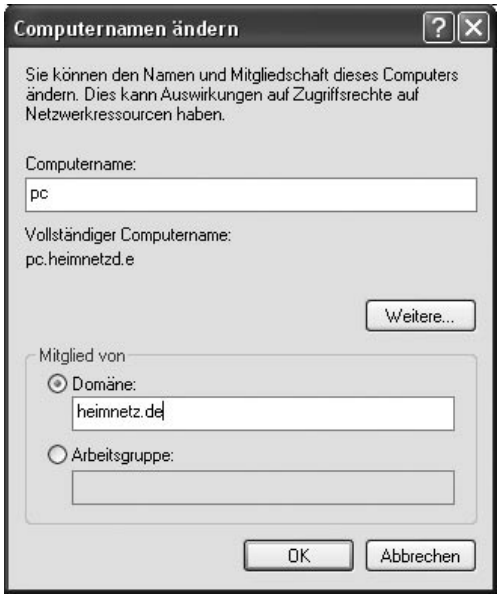
9.3.2 Automatic configuration via DHCP



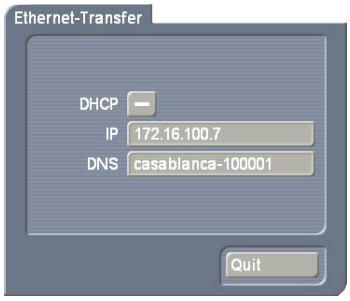
In the “DHCP” section, you can first of all decide whether your system should be assigned a network address automatically. This function can only be used if a DHCP server exists on the network. If this is the case, activate the check box so that a check mark appears. You will then see a window appear for a while that indicates that a network connection is being started. This might take a little time depending on the size of the network.
Afterwards, a number will appear in the “IP” field below and you can begin transferring data using Ethernet Transfer by starting “Internet Explorer” on your PC (see below).
If the automatic configuration (connection to the network) has failed or was not possible or if you decide to assign an address to your system manually, you can specify a free (!) IP address within your network for your system in the “IP” field.

Only applies to DHCP:
If you prefer to work with the name of the device instead of its IP address and if there is a Domain Name Server (DNS) present on your network, a hostname will be configured automatically for your device (default value: casablanca-“S/N”). The PC should then also have been configured with DHCP or should be present in the same domain.
In any case, the PC that is supposed to communicate with the system over the network should have an IP address from the same “address space”. The safest way of doing this when assigning an address manually is to change only the last segment of the IP address.

Examples:
If you are using a domain server and it is configured in the “mynet.com” domain, your system could then, for instance, be called “Solitaire.mynet.com”.
In this case, the “Name” field on the system is activated. (Capitalization is ignored when used in the browser):



PC.mynet.com



"Solitaire"= Solitaire.mynet.com

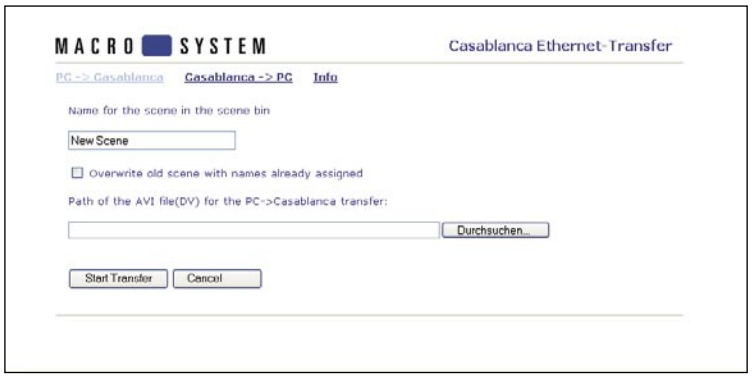
The PC being used must also use the same domain server or be logged on to the same domain. (Manual login via: Control Panel->System->Computer Name->Change)

Casablanca Ethernet-Transfer - Microsoft Internet Explorer
Datei Bearbeiten Ansicht Favoriten Extras ?
Zurück Suchen Favoriten
Adresse http://solitaire/

Access via "http://solitaire".

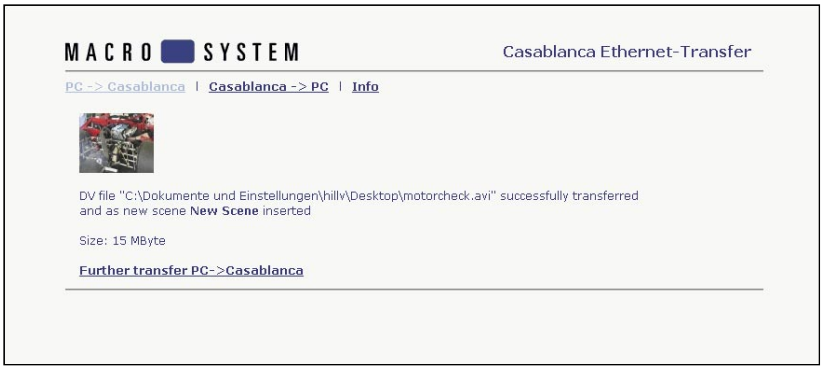
9.4 Ethernet Transfer on the PC

Now, on your PC, start the "**Internet Explorer**" browser (at least version 6.0 or higher). Once you have entered the IP address of your system (e.g. 192.168.1.10) or the configured hostname (e.g. "**Solitaire.mynet.com**") in the "**Address**" field you will be given access to your system. You will now see the following window of the "**Ethernet Transfer**" program:



1.) PC -> System

If you want to transfer your video data from the PC to the system, click on the "**PC --> Casablanca**" button.
A window opens in which you can first of all specify the name that you want the scene to have in the SMART EDIT scene bin after it is transferred. If you do not choose a name here, the system will call the scene "**New Scene**".
Beneath this is a little check box that you can activate if you want to overwrite an old scene that already has the same scene name.
Afterwards, press the "**Search**" button to enter the path of the AVI file that you want to transfer. A file browser will subsequently open in which you should select the AVI file that you want and then click on "**Open**". The path then appears in the window provided for this purpose and you can then click on "**Start Transfer**".
If a file transfer is unsuccessful, an error message will inform you of this. Please try again (or with another file) by clicking on the "**Further transfer PC --> Casablanca**" button.
If the transfer was successful, a message will inform you that the file has been saved on the system under its name.


MACRO SYSTEM
Casablanca Ethernet-Transfer
PC -> Casablanca | Casablanca -> PC | Info
DV file "C:\Dokumente und Einstellungen\hillv\Desktop\motorcheck.avi" successfully transferred and as new scene New Scene inserted
Size: 15 MByte
Further transfer PC->Casablanca

If you want to transfer further files from the PC to the system, click on the "**Further transfer PC --> Casablanca**" button.
Note: The file size is restricted to a maximum of 1 GB when transferring data from a PC --> system.

2.) System --> PC

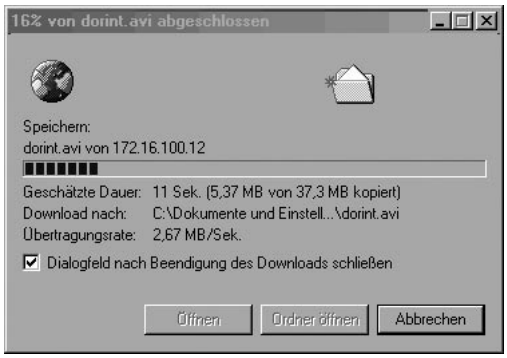
Playing a scene

MACRO SYSTEM
Casablanca Ethernet-Transfer
PC -> Casablanca | Casablanca -> PC | Info
16 000.03:09 no41 Size: 12 MB
17 000.07:06 no42 Size: 26 MB
18 000.04:09 motorcheck Size: 15 MB
19 000.04:10 nuerburg Size: 15 MB
20 000.03:20 58ferrari Size: 13 MB
21 000.05:07 elf Size: 19 MB
22 000.04:05 formel1 Size: 15 MB
23 000.08:14 iplayer Size: 30 MB
24 000.08:16 marlboro Size: 31 MB
25 000.10:09 dorint Size: 37 MB
26 000.03:10 driving Size: 12 MB
27 000.03:13 penthouse Size: 12 MB
28 000.04:16 driver Size: 16 MB
29 000.04:19 girl Size: 17 MB
30 000.03:04 winner Size: 11 MB
<< Scene 16 to 30 >>
Jump to
001 | 016 | 031 | 046 | 061 | 076 | 091 |

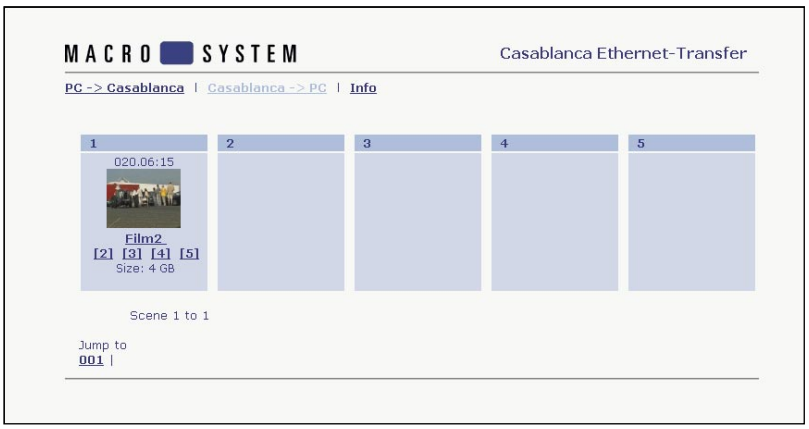
If you want to transfer video footage from the systemto the PC, click on the "**Casablanca --> PC**" menu item. You will see a list of all the scenes that are available in the SMART EDIT scene bin. Fifteen scenes are displayed per page. There is a bar at the bottom edge of the window that you can use to display the subsequent pages ("Jump to..."). The scenes are displayed with their names and the first frame of the scene.

Now click the left mouse button on the file that you want – this action directly opens the Windows Media Player and plays the file. In order to be able to play the video, a DV codec must of course be installed. Before you can play the video footage using Media Player, it must first be transferred to the PC as a temporary AVI file. This process might take a few seconds to complete (depending on the length of the scene). You will see a progress bar on the SMART EDIT screen during the transfer. After your video has been played you have the option of saving the file on the PC by pressing the "**File**" button and then "**Save as**". (You might first have to press the "**Show menu**" button that is located at the top left before you can access the "**Save as**" button in the "**File**" menu.
If you click on the "**Save as**" button, a file browser opens in which you can select the location that you want to save the file as well as change the name if you wish. Finally, save the file by clicking on "**Save**".
Please note: If Media Player is not installed or you are prohibited from opening AVI files directly, the left click will cause the file to be downloaded!

Saving a scene
If you do not want to play the scene but instead transfer the scene immediately to the PC and save it there, you can avoid playing it by clicking the right mouse button on the file name or on the scene's thumbnail image so that a menu opens. In this menu, use the left mouse button to select the "**Save target as**" option so that a file browser opens in which you can select the location that you want to save the file to as well as change the name if you wish. Finally, save the file by clicking on "**Save**". You will see a file transfer window that informs you about the approximate length of time required, the location where you are saving the file and the transfer rate.

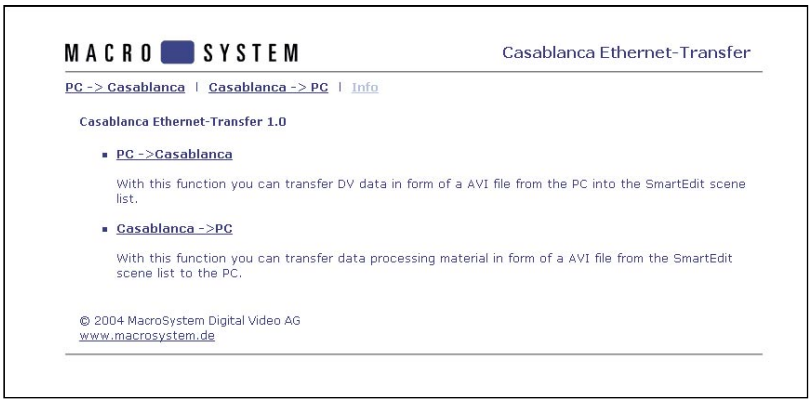


Special case: If you want to transfer a scene from the system to the PC that exceeds a length of 4:43 minutes or has a file size greater than 1 Gbyte you must transfer the scene manually in sections of 1 Gbyte (+ the remaining portion of the scene). The scene sections are indicated accordingly in the web browser with [2], [3], [4], etc. The first section can be opened via the scene's name and via its thumbnail image.



3.) Info

If you click on the "**Info**" button you will be provided with information on both transfer directions ("PC --> Casablanca" and "Casablanca --> PC").


MACRO SYSTEM
Casablanca Ethernet-Transfer
PC -> Casablanca | Casablanca -> PC | Info
Casablanca Ethernet-Transfer 1.0
PC ->Casablanca
With this function you can transfer DV data in form of a AVI file from the PC into the SmartEdit scene list.
Casablanca ->PC
With this function you can transfer data processing material in form of a AVI file from the SmartEdit scene list to the PC.
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www.macrosystem.de

9.5 Background knowledge

DHCP stands for "Dynamic Host Configuration Protocol"
-> Automatic connection to the network through a DHCP server (e.g. present in the local DSL router) upon request by the DHCP client (system, PC)
Basic functioning: when a network connection is initialized and DHCP is activated, the client (i.e. the PC or in our case the system) sends a query to the network asking whether a server exists that can assign an IP address to the client. If this kind of server exists, additional data can then also be assigned such as the hostname, the address of the relevant DNS server, etc.

DNS stands for "Domain Name System"
-> Management and resolution of "Names<->IP" allocations by the DNS server (e.g. present in the local DSL router)
The DNS server is like a telephone directory on the network. Since it is easier to remember a name (like "Solitaire.mynet.com") rather than an address (like "123.456.7.890") DNS servers are used on networks to simplify our work.

IP network classes and subnet masks:
Version 4 IP addresses (IPv4) are made up of 32 bits that are generally written in decimal form in four segments of 8 bits each. The classical subdivision of the address space that arises from the 32-bit addresses (a total of 4,294,967,296 computers can be addressed) provides for three network

classes that are differentiated by way of the first segment of the address.

For a “normal home network” all you need to know is that there are private address ranges that are not and cannot be used on the internet and are therefore “free to use”). Under normal circumstances, it is sufficient if you assign, for instance, the IP address 192.168.0.1 to the PC and the IP address 192.168.0.2 to the system. Further PCs, devices, etc. can then be assigned addresses that differ in the last segment of the address.
Then, in order to display the SMART EDIT user interface, all you need do is enter “http://192.168.0.2” in the web browser on the PC.

Further notes:

- The PC might only react very slowly while large files are being transferred from the system to the PC or from the PC to the system. We therefore recommend you do not work with other programs during a file transfer and that you close these programs beforehand.
- When starting Ethernet Transfer, there might be a delay if the DHCP function was used beforehand. The program should start immediately if the IP address has been assigned manually.
- File transfers via Ethernet are only possible if the Ethernet Transfer program has been started on the system. It is not possible to work with the system during an active transfer/ connection.
- Audio files cannot be transferred using Ethernet Transfer. If you want to transfer an audio file from the system to the PC, you must first of all use the special “Sample->Scene” function to create a black scene from the audio file that you can then transfer to the PC using Ethernet Transfer.
- If a file is transferred from the PC to the system, the progress bar is run through twice. The scene is transferred during the first step and in the second step it is converted for the SMART EDIT scene bin.
- In order to maintain as high a level of compatibility as possible with the various PC video editing programs, a type-2 DV-AVI is saved/created when transferring a scene from the system to the PC. Alongside the original DV video (in which the audio and video components are mixed), the audio component is saved separately as an additional component in the file in accordance with the present AVI standard.

A DV-AVI codec must be installed on the PC before you can play and edit AVI files on the PC.

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